

# Housing & Safety Element Update to the Marin Countywide Plan

Draft Environmental Impact Report  
County of Marin



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<b>List of Acronyms, Abbreviations, and Symbols</b>	
<b>Acronym / Abbreviation</b>	<b>Full Phrase or Description</b>
%	Percent
(D)EIR	(Draft) Environmental Impact Report
(F)ESA	(Federal) Endangered Species Act
§	Section
°C	Degrees Celsius
°F	Degrees Fahrenheit
µm	Micrometer
1600 Agreements	Streambed/Lake Alteration Agreement
AB	Assembly Bill
AB 939	California Intergrated Waste Management Act of 1989
ABAG	Association of Bay Area Governments
ACC	Advanced Clean Cars
ACM	asbestos-containing material
ADA	Americans with Disabilities Act of 1990
ADU	Accessory Dwelling Unit
ADWF	average dry weather flow
af	acre-feet
AFB	Air Force Base
ALUC	Airport Land Use Commission
ALUCP	Airport Land Use Compatibility Plan
ALUP	Airport Land Use Plan
APG	California Adaptation Planning Guide
APSA	Aboveground Petroleum Storage Act
ASTM	American Society for Testing and Materials
Ave	Avenue
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BART	Bay Area Rapid Transit
BASMAA	Bay Area Stormwater Management Agencies Association
BAU	Business-As-Usual
BCDC	Bay Conservation and Development Commission
BCPUD	Bolinas Community Public Utility District
BERD	Built Environment Resources Directory
BGEPA	Bald and Golden Eagle Protection Act
Blvd	Boulevard
BMP	Best Management Practice
Btu	British Thermal Unit
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy

CAISO	California Independent System Operator
CAL FIRE	California Department of Forestry and Fire Protection
Cal OES	California Governor's Office of Emergency Services
Cal/OSHA	California Occupational Safety and Health Administration
CalARP	California Accidental Release Program
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CAO	Cleanup and Abatement Orders
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CARE	Community Air Risk Evaluation
CBC	California Building Code
CBSC	California Building Standards Code
CBSC	California Building Standards Commission
CCC	California Coastal Commission
CCR	California Code of Regulations
CD	Community Development
CDFW	California Department of Fish and Wildlife
CDO	Cease and Desist Order
CDPH	California Department of Public Health
CEC	California Energy Commission
CEIDARS	California Emissions Inventory Development and Reporting System
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (commonly known as Superfund)
CERS	California Environmental Reporting System
CERT	Community Emergency Response Team
CESA	California Endangered Species Act
CFC	Chlorofluorocarbon
CFC	California Fire Code
CFCP	California Farmland Conservancy Program
CFR	Code of Federal Regulations
CGP	Construction General Permit
CH4	Methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CI	Carbon Intensity
CMP	Construction Management Plan
CMP	Congestion Management Program

CMSA	Central Marin Sanitation Agency
CNDDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
County	Marin County
CPUC	California State Public Utilities Commission
CRC	California Residential Code
CRHR	California Register of Historic Resources
CRS	Community Rating System
CT-RAMP	Coordinated Travel - Regional Activity Based Modeling Platform
CUPA	Certified Unified Programs Agency
CWA	Clean Water Act
CWP	Marin Countywide Plan
CWPP	Community Wildfire Protection Plan
CWSC; Cal Water	California Water Service Company
D	Distance
dB	Decibel (unweighted)
dba	Decibels, A-Weighted
DHS	California Department of Health services
DNL / L <sub>dn</sub>	Day-Night Noise Level
DOC	California Department of Conservation
DOT	United States Department of Transportation
DPM	Diesel Particulate Matter
DPS	Distinct Population Segment
Dr	Drive
DTSC	Department of Toxic Substances
DTSC	Department of Toxic Substance Control
DWR	Department of Water Resources
EBMUD	East Bay Municipal Utility District
ECC	Emergency Command Center
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EISA	Energy Independency and Security Act
EMF	Electromagnetic Field
EMS	Emergency Medical Service
EMWS	Estero Mutual Water System
EO	Executive Order
EOC	Marin County's Emergency Operations Center

EOP	Emergency Operations Plan
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning Community Right-to-Know Act
ESA	Environmental Site Assessment
ESCP	Erosion and Sedimentation Control Plan
ESU	Evolutionary Significant Unit
et seq.	and what follows (used in page references)
EV	Electric Vehicle
F/V	Fishing Vessel
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FAR	Floor Area Ratio
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHA	Federal Housing Administration
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Works Administration
FIGR	Federated Indians of Graton Rancheria
FIRM	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FMP	Fishery Management Plan
FPP	Farmland Protection Program
FPPA	Farmland Protection Policy Act
FRA	Federal Responsibility Area
FRA	Federal Responsible Area
FSM	Fire Safe Marin
FTA	Federal Transit Administration
GGNRA	Golden Gate National Recreation Area
GHG	Greenhouse Gas
GIS	Geographic Information System
gpd	Gallons per day
GPU	General Plan Update
GSA	groundwater sustainability agencies
GSP	groundwater sustainability plans
GVWR	Gross Vehicle Weight Rating
GWh	Gigawatt-hours
GWP	Global Warming Potential
H&SC	California Health and Safety Code
H <sub>2</sub> S	Hydrogen Sulfide
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HAP	Hazardous Air Pollutants



HCD	California Department of Housing and Community Development
HCP	Habitat Conservation Plan
HE	Housing Element
HEU	Housing Element Update
HFC	Hydrofluorocarbon
HFHSZ	High Fire Hazard Severity Zone
HHW	Household Hazardous Waste
HMBP	Hazardous Materials Business Plan
HMIS	Hazardous Materials Inventory Statement
HMMP	Hazardous Material Management Plan
HOD	Housing Overlay Designation
HOV	High Occupancy Vehicle
HUD	United States Department of Housing and Urban Development
HVAC	Heating, Ventilation, and Air Conditioning
Hz	Hertz
I-	Interstate
IAQ	Indoor Air Quality
IBC	International Building Code
IC	Information Center
ICS	Incident Command System
In/sec	Inches per Second
IPaC	Information for Planning and Consultation
IPUD	Inverness Public Utility District
IWMP	Integrated Waste Management Plans
kWH	kilowatt hours
LCFS	Low Carbon Fuel Standard
LCP	Local Coastal Program
LCP	Local Coastal Land Use Plan
LD-IGR	Local Development - Intergovernmental Review
$L_{eq}$	Average / Equivalent Noise Level
LEV	Low-Emission Vehicle
LGVSD	Las Gallinas Valley Sanitary District
LHMP	Local Hazard Mitigation Plan
$L_{max}$	Maximum Noise Level
$L_{min}$	Minimum Noise Level
LOP	Local Oversight Program
LOS	Level of Service
LRA	Local Responsibility Area
LSAA	Lake and Streambed Alteration Agreement
LT	Long-term
LUST	Leaking Underground Storage Tank
LZ	Lighting Zone

m <sup>3</sup>	Cubic Meter
MALT	Marin Agricultural Land Trust
MAZ	Micro-Analysis Zone
MBCSD	Muir Beach Community Services District
MBTA	Migratory Bird Treaty Act
MCE	MCE Clean Energy
Mcf	million cubic feet
MCFD	Marin County Fire Department
MCHSWJPA	Marin County Hazardous and Solid Waste Joint Powers Authority
MCM LHMP	Marin County Multi-Jurisdiction Local Hazard Mitigation Plan
MCOE	Marin County Office of Education
MCSO	Marin County Sheriff's Office
MCSTOPPP	Marin County Stormwater Pollution Prevention Program
MFA	Mitigation Fee Act
MG	Million Gallons
MGD	million gallons per day
MHW	Mean High Water
MMBTU	Million British Thermal Units
MMI	Modified Mercalli Intensity
MMWD	Marin Municipal Water District
mph	miles per hour
MPO	Metropolitan Planning Organization
MRMP	mineral resource management plan
MRRC	Marin Resource Recovery Center
MS4s	Municipal Separate Storm Sewer System
MSDS	Material Safety Data Sheets
MSL	mean sea level
MSWLF	Municipal Solid Waste Landfill
MTC	Metropolitan Transportation Commission
MTCO <sub>2e</sub>	metric tons of CO <sub>2</sub> equivalents
MWh	Megawatt-hours
MWPA	Marin Wildfire Prevention Authority
N <sub>2</sub> O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act of 1969
NFIP	National Flood Insurance Program
NFP	National Fire Plan
NHPA	National Historic Preservation Act of 1966
NHTSA	National Highway Safety Administration

NIMS	National Incident Management System
NMFS	National Marine Fisheries Service
NMWD	North Marin Water District
NO	Nitric Oxide
NO <sub>2</sub>	Nitrogen Dioxide
NOAA	National Oceanic and Atmospheric Administration
NOx	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSD	Novato Sanitary District
NWI	National Wetlands Inventory
NWIC	Northwest Information Center
O <sub>3</sub>	Ozone
OA	Operational Area
OA	Operational Area
OE/AAA	Obstruction Evaluation/Airport Airspace Analysis
OEHHA	Office of Environmental Health and Hazard Assessment
OES	Marin County Sheriff Office of Emergency Services
OHP	State Office of Historic Preservation
OITC	Outside-Indoor Transmission Class
OPR	California Governor's Office of Planning and Research
OSFM	Office of the State Fire Marshal
OSHA	Occupational Safety and Health Administration
OWM	Office of Wastewater Management
p.	page
PCB	polychlorinated biphenyls
PDA	Priority Development Area
PFC	Perfluorocarbon
PFS	Public Facilities and Safety
PG&E	Pacific Gas and Electric
PM	Particulate Matter
PM <sub>10</sub>	Coarse Particulate Matter
PM <sub>2.5</sub>	Fine Particulate Matter
Porter-Cologne	Porter-Cologne Water Quality Control Act
pp.	pages
ppm	Parts Per Million
PPV	Peak Particle Velocity (inches/second)
PRC	Public Resources Code
PSI	Power Service Interruptopms

Quimby	State of California Quimby Act
RCD	Marin Resource Conservation District
RCRA	Resource Conservation and Recovery Act
Rd	Road
RFS	Renewable Fuel Standards
RHNA	Regional Housing Needs Allocation
ROG	Reactive Organic Gases
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RUE	Residential Unit Equivalents
RWQCB	Regional Water Quality Control Board
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel-Efficient Vehicles Rule
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SB50	Senate Bill 50 "Leroy F. Greene School Facilities Act of 1998"
SBCWD	Stinson Beach County Water District
SCA	Stream Conservation Area
SCAQMD	South Coast Air Quality Management District
SCP	stormwater control plan
SCS	Sustainable Communities Strategy
SCWA	Sonoma County Water Agency
SDWA	Safe Drinking Water Act
SEMS	Superfund Enterprise Management System
SEMS	Standardized Emergency Management System
SF6	Sulfur Hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SFHAs	Special Flood Hazard Areas
SFRWQCB	San Francisco Regional Water Quality Control Board
SGMA	Sustainable Groundwater Management Act
SHS	State Highway System
SIP	State Implementation Plan
SLCP Strategy	Short-Lived Climate Pollutant Reduction Strategy
SMARA	Surface Mining and Reclamation Act
SMART	Sonoma Marin Area Rail Transit
SMCSD	Sausalito-Marín City Sanitary District
SMP	Standard Management Practice
SO <sub>2</sub>	Sulfur Dioxide
SO <sub>4</sub> <sup>2-</sup>	Sulfates
SO <sub>x</sub>	Sulfates
SP	Service Population
SR	State Route

SR1	State Route 1
SRA	State Responsibility Area
SRRE	Source Reduction and Recycling Elements
SSMP	Sewer System Management Plan
ST	Short-term
St	Street
STAR	Support and Treatment After Release
State Water Board	State Water Resources Control Board
STC	Sound Transmission Class
SWAT	Special Weapons and Tactics
SWFP	Solid Waste Facilities Permit
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TAM	Transportation Authority of Marin
TAMDM	Transportation Authority of Marin Demand Model
TAP	Transit Access Points
TAZ	Transportation Analysis Zone
TDM	Transportation Demand Management
TISG	Transportation Impact Study Guide
TM1	Travel Model One
TMDL	Total Maximum Daily Load
TNM	Traffic Noise Model
TVFC	Tomales Volunteer Fire Company
U.S.	United States
U.S. 101	U.S. Highway 101
UF	Usage Factor
Unified Program	unified hazardous waste and hazardous materials management regulatory program
USACE	United States Army Corps of Engineers
USCB	U.S. Census Bureau
USDA	United States Department of Agriculture
USEIA	United State Energy Information Administration
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
UWMP	Urban Water Management Plan
VdB	Velocity Decibels
VHFHS	Very High Fire Hazard Severity
VHFHSZ	Very High Fire Hazard Severity Zone
VMP	Vegetation Management Plan
VMT	Vehicle Miles Travelled
VOC	Volatile Organic Compounds

VORP	Victim Offender Reconciliation Program
WCA	Wetland Conservation Area
WDRs	Waste Discharge Requirements
WQ	Water Quality
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan
WUI	Wildland Urban Interface
WWTP	Wastewater Treatment Plant
ZEV	Zero Emission Vehicle
ZNE	Zero Net Energy
$\mu\text{g}/\text{cm}^3$	micrograms per cubic meter

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## 1. INTRODUCTION

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This Draft Environmental Impact Report (Draft EIR) has been prepared by the County of Marin (“County”) in accordance with the California Environmental Quality Act (CEQA)<sup>1</sup> and the State CEQA Guidelines (CEQA Guidelines)<sup>2</sup> to describe the potential environmental consequences, also known as impacts, from implementation of the proposed Housing and Safety Element Update to the 2007 Marin Countywide Plan (2007 CWP), the proposed Project.<sup>3</sup> The proposed Project consists of updates to the Housing Element of the 2007 CWP and to the portions of the 2007 CWP that comprise the Safety Element as mandated by the requirements for General Plans in State Planning and Zoning Law; associated amendments to other elements in the 2007 CWP as necessary to ensure consistency; and amendments to the Marin County Code to provide for effective implementation of the Project.<sup>4</sup>

The Project includes land use designations for housing sites, policies for the unincorporated portions of Marin County related to housing needs and conditions, and climate change adaptation measures, including for wildfire, sea level rise, and flooding concerns. This Draft EIR is intended to serve as an informational document for use by public agency decision makers and the public in their consideration of the proposed Project.

CEQA and the State CEQA Guidelines charge public agencies with the responsibility of informing governmental decision makers and the public about the potentially significant environmental effects of proposed activities; identifying the ways that environmental damage can be avoided or significantly reduced; preventing significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and disclosing to the public the reasons a governmental agency approved the project in spite of one or more significant environmental effects.<sup>5</sup> Marin County, as the Lead Agency, has prepared this EIR for the proposed Project in accordance with CEQA, the State CEQA Guidelines, and the Marin County Environmental Impact Review (EIR) Guidelines.<sup>6</sup> In making its decision about the proposed Project, Marin County must consider the information in this EIR along with any other available information.

### 1.1 EIR PURPOSE AND INTENDED USE

State law requires each city and county to adopt a general plan containing at least the seven mandatory elements, including a housing element and a safety element. Unlike the other

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<sup>1</sup>California Public Resources Code, Section 21000 et seq.

<sup>2</sup>California Code of Regulations, Title 14, Section 15000 et seq.

<sup>3</sup>For this EIR, the term “Project” applies to both the Housing Element Update and the Safety Element Update, plus associated amendments to the CWP and County Code proposed to facilitate implementation of the policies and programs included in the Housing Element Update and Safety Element Update. The term “project” as used in this EIR refers any other development proposal or application subsequent to adoption of the Project.

<sup>4</sup>See EIR Chapter 3, Project Description, for a complete discussion of the Project.

<sup>5</sup>California Public Resources Code Section 21002.

<sup>6</sup>Marin County Environmental Impact Review Guidelines (EIR Guidelines), May 17, 1994.

general plan elements, the housing element, which is required to be updated at least once every eight years, is subject to detailed statutory requirements and mandatory review by a State agency, the California Department of Housing and Community Development (HCD). The last update to the Marin County Housing Element was adopted by the Board of Supervisors in December 2014, and then certified by HCD as complying with State law. It addresses the period from 2015 through 2023.

Marin County has now prepared an update to the Housing Element (Housing Element Update) for the planning period 2023 through 2031. The County has also prepared an update to the Safety Element (Safety Element Update). As described further in Section 1.2.4, below, the 2007 CWP does not contain an adopted "Safety Element" as a standalone document but does contain policies and programs that address the required contents of a safety element, in compliance with State law, and these policies and programs are contained in The Natural Systems and Agriculture, The Built Environment, and The Socioeconomic Elements. Both updates will be adopted as amendments to and incorporated in the 2007 CWP.

As part of informing decision-makers, other responsible agencies, and the general public of the proposed Project and its environmental consequences, this EIR is intended to provide the CEQA-required environmental review for the proposed Project, which includes adoption of the proposed CWP amendments as well as associated changes to the Marin County Development Code, including zoning code changes.

The EIR is intended to serve as a public information and disclosure document identifying and analyzing those environmental impacts resulting from the Project that are expected to be significant and describing mitigation measures and alternatives that could avoid or reduce significant adverse impacts and increase beneficial effects.<sup>7</sup> This is a program EIR consistent with the programmatic level of detail of the proposed Project (see Section 1.3 below). Accordingly, impacts and mitigation are discussed in this EIR at the level of detail sufficient to allow a reasoned decision about the Project. As a result of the information in this EIR, the Marin County Board of Supervisors may act to approve or deny the proposed Project actions and/or to establish requirements or conditions of approval for future development projects that are considered necessary to mitigate identified Project impacts on the environment.

Marin County is the lead agency for the Project. A lead agency, as defined in Section 15367 of the State CEQA Guidelines, is "the public agency that has the principal responsibility for carrying out or approving a project."

The 2023-2031 Housing Element Update and Safety Element Update will be considered by the Marin County Board of Supervisors for adoption. No discretionary approvals or permits are required by other agencies following certification of the Final EIR. The Marin County Planning Commission will make a recommendation regarding Final EIR certification to the Board of Supervisors prior to the Board of Supervisors' action on the Final EIR and on the proposed Housing Element Update and Safety Element Update. Following County approval, the State Department of Housing and Community Development (HCD) will be asked to certify the County's Housing Element Update. There are no responsible or trustee agencies for this project pursuant to CEQA.

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<sup>7</sup>CEQA Guidelines Section 15149(b).



As a program EIR (see below), the County may rely on this EIR in evaluating and acting on subsequent, site-specific development proposals in the County Planning Area, which is the unincorporated area within the County, to the extent that such future reliance on this EIR is permitted by CEQA and the State CEQA Guidelines.

In order to avoid repetition and provide a manageable environmental document, this Draft EIR does not duplicate the detailed contents of the Housing Element Update and the Safety Element Update documents. The reader is encouraged to review those documents, or the sections that interest the reader, for more detail. Copies of the Housing Element Update, the Safety Element Update, and this Draft EIR are available for viewing at County offices at: **Marin County Community Development Agency, 3501 Civic Center Drive, Room 308, San Rafael, CA 94903**. These Elements and other information about the County's Housing and Safety Elements update process are also available online at the following web addresses:

<https://www.marincounty.org/depts/cd/divisions/planning/housing-and-safety-elements>

<https://housingelementsmarin.org/marin-county-environmental-review>

## 1.2 PROPOSED PROJECT

### 1.2.1 Overview

The proposed Project is comprised of updates to the Housing Element and Safety Element of the Marin Countywide Plan (CWP) in compliance with the requirements for General Plans in State Planning and Zoning Law; associated amendments to other elements in the CWP as necessary to ensure consistency; and amendments to the Marin County Code to provide for effective implementation of the project (collectively the "Project"), and is described in more detail in Chapter 3, Project Description, of this EIR.

The Project proposes goals, policies, and programs that will provide County staff and discretionary bodies with a foundation for decisions related to long-range planning for housing development and safety, including the effects of climate change. The goals of the Project are to revise the adopted Housing and Safety Elements to create a policy framework for:

1. facilitating new housing growth throughout the unincorporated County area in response to the region's need for more affordable and market rate housing, and meeting the County's 2023-2031 Regional Housing Needs Allocation (RHNA);
2. responding to the broad range of housing needs in Marin County by supporting a mix of housing types, densities, affordability levels, and designs;
3. promoting healthy neighborhoods that incorporate best practices related to land use, racial equity, mobility, housing, affordability, safety, environmental justice, community services, and design;
4. combating housing discrimination, eliminate racial bias, undo historic patterns of segregation, and lift barriers that restrict access in order to foster inclusive communities and achieve racial equity;
5. engaging residents and stakeholders to ensure equitable and inclusive processes, policies, investments, and service systems;
6. establishing new CWP goals, policies, and programs to include climate change adaptation and resiliency planning, sea level rise, and additional wildfire measures, and

providing direction to improve emergency preparedness, response, and recovery; developing strategies that help people, infrastructure, and community assets adapt to and recover from evolving climate threats and vulnerabilities, and from natural and human-caused hazards;

7. developing a Safety Element that meets all the requirements under Government Code Section 65302(g), and which reflects State and local regulations for specific hazards, with the intent of protecting people and key infrastructure from damage resulting from an environmental hazard;
8. identifying communities most vulnerable to climate change impacts and establish new goals, policies, and programs for equitable public safety, emergency preparedness, response and recovery; and
9. embracing technology and innovative practices to create smart, sustainable cities and adaptable infrastructure systems.

### 1.2.2 Project Background

The County began the process of updating the Housing and Safety Elements in late summer/early fall 2021. The initial site identification process studied over 150 possible candidate housing sites and included opportunity sites suitable for residential development, including vacant sites and sites having the potential for redevelopment that can be developed for housing within the Housing Element planning period of 2023 through 2031. The 150 candidate housing sites contained a development potential that would allow up to 10,993 units that the Marin County Planning Commission and Board of Supervisors could select from to identify sites that could be used to meet the County's RHNA of 3,569 units.

The Planning Commission and Board of Supervisors hosted a series of workshops to develop guiding principles that would direct the site selection process, evaluate scenarios that tested how well different approaches addressed guiding principles, to receive input on the issues and merits of specific sites, and to collect feedback on proposed policies and programs. Existing environmental conditions and likely constraints were considered. Sites were also identified throughout the community to address fair housing and to address historic patterns of segregation. In addition, State law considerations were included in the evaluation, such as lot size, default density, development trends and potential, recycling of prior sites, development on non-vacant sites, and "no net loss" requirements that ensure development opportunities remain available throughout the planning period to accommodate a jurisdiction's RHNA by providing additional sites for lower and moderate income categories.

In April 2022, after conducting workshops in November of 2021, January 2022, and March of 2022, the Planning Commission and Board of Supervisors endorsed the "Proposed Project Sites" identified in Figure 3.5 and Table 3-2 for analysis in the Environmental Impact Report. County Planning Staff initiated the environmental review contained in this EIR. The Marin County Planning Commission and Board of Supervisors will provide input and direction on the final site selection as part of the Housing and Safety Element adopting process.

As shown in Table 3-2, the proposed "Project Sites" identified by the County would be sufficient to meet the County's RHNA of 3,569 units and also would provide for extra units to create a buffer in the housing inventory of at least 15 to 30 percent more capacity than required, as recommended by the California Department of Housing and Community Development. An additional 1,286 units are included for applicants requesting a 35 percent density bonus, bringing the total proposed units for the Project to 5,214 units.

During the Housing Element Update process discussed above, the County also coordinated preparation of the updates to the Safety Element, which included public workshops to present countywide safety issues and collect community feedback. The Safety Element Update is required by new State laws for local governments to update their safety elements alongside their housing element updates. State law requires safety elements to address protection of people from unreasonable risks associated with disasters, including earthquakes, floods, fires, and landslides. Other locally relevant safety issues, such as airport land use, emergency response, and hazardous materials spills may also be included. New state laws also require safety elements to address climate change resilience.

The Safety Element lays the groundwork for countywide hazard planning and programming and identifies measures to minimize impacts of environmental hazards. Consistent with State guidance on incorporating climate adaptation strategies and implementation measures into safety elements, Marin County has prepared a vulnerability assessment to determine public safety risks from climate change, including flooding, wildfire, drought, extreme heat, sea level rise, and storm activity.

The draft Safety Element Update was circulated for public comment on June 1, 2022 and the comment period closed on June 30, 2022. The draft Safety Element Update was also sent to the State Department of Forestry for review and approval on June 2, 2022. It was approved with edits by the Board of Forestry on September 22, 2022.

### **1.2.3 Housing Element Update**

The Housing Element Update consists of five chapters, summarized below, and four appendices:<sup>8</sup>

*Chapter 1, Introduction*, provides an overview of the county and describes the purpose of the Housing Element, housing element law, information requirements, and a summary of the community involvement and decision-making processes and techniques used.

*Chapter 2, Housing Needs Analysis*, provides a description of the County and its population and employment trends, household characteristics, and housing stock characteristics. The chapter also describes the RHNA, housing costs, household income, the ability to pay for housing, and specific housing issues such as overcrowding, habitability, and others.

*Chapter 3, Housing Constraints*, discusses nongovernmental constraints to the development of housing such as available vacant land, construction costs and financing, community resistance to new housing, and availability of infrastructure, and governmental constraints including regulatory standards presenting possible conflicts with each other, permit processing timelines, and planning application review and fees.

*Chapter 4, Resources*, discusses land characteristics; development policy and objectives focusing residential development to the City-Centered Corridor; affordable housing in the county and the populations it serves; housing strategies for meeting the RHNA; the process for

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<sup>8</sup>The four Housing Element Update appendices are: Appendix A, community outreach efforts conducted; Appendix B, review of the 2015 Housing Element; Appendix C, sites inventory; and Appendix D, a comprehensive discussion of the County's commitment to specific meaningful actions to affirmatively further fair housing.

identifying potential housing sites; local funding opportunities; and opportunities for energy conservation.

*Chapter 5, Goals, Policies, and Programs*, contains the Housing Element Update policies and programs, and describes the County's commitment to address current and future housing needs, including examining policies and programs under AB 686 (described in Housing Element Update Appendix D: Affirmatively Furthering Fair Housing).

#### **1.2.4 Safety Element Update**

As discussed above, the 2007 CWP does not contain an adopted "Safety Element" as a standalone document but does contain policies and programs that address the required contents of a safety element, in compliance with State law. These policies and programs are contained in The Natural Systems and Agriculture, The Built Environment, and The Socioeconomic Elements. The currently adopted policies and programs in CWP Section 2.6 – Environmental Hazards address geologic, flooding, and wildfire hazards and are being updated to comply with new State requirements to include climate change and resiliency planning, as well as new requirements to further address sea level rise, flooding, and wildfire hazards. The proposed "Safety Element Update" includes new policies and programs, and revisions to already adopted Environmental Hazards policies and programs, in compliance with new State laws. Collectively, this content comprises the Safety Element Update, which is part of the Project being evaluated in this EIR. Updated Section 2.6 of the CWP is now considered the County's "Safety Element," as explained in the first paragraph of that section. The Safety Element Update is comprised of the following sections:

*A background section*, which explains the context of the Safety Element in the CWP and how the Safety Element is intended to provide an understanding of the hazards that could threaten unincorporated Marin County, plus practices and policies that will enable continued prosperity and resilience in the county.

A section titled *What is a Safety Element?* which describes the Safety Element as one of the State-mandated elements of the CWP and identifies and discusses State requirements for equitable community safety planning; disaster preparedness, response and recovery; geology and seismicity; flooding; wildfire; and climate change and resiliency planning.

*Other Documents Incorporated by Reference*, which identifies key documents relied on during preparation of the Safety Element.

*Additional Reference Documents*, which identifies other relevant documents related to wildfire protection, sea level rise, and adaptation.

A section titled *Marin County Hazards*, which discusses environmental hazards from geology and seismicity, flooding, wildfire, and climate change. Other topics discussed include resiliency planning; disaster preparedness, response, and recovery; the changing regulatory environment and approach to climate planning; equitable community safety planning and vulnerable populations; and hazard recovery planning.

### 1.2.5 Amendments to the CWP and County Code

As discussed in Chapter 3, Project Description, amendments to the CWP and County Code would be necessary to implement the programs identified in the Housing Element Update and Safety Element Update. These would include the following:

- Changes to the land use designations (where needed) to accommodate the development intensity needed to satisfy the RHNA;
- Changes to policy exceptions that only allow development to occur at the lowest end of the density range;
- Changes to policies and programs to remove barriers to residential development (adjustment to the City-Center/Inland Rural boundaries, modify policies related to density limitations, modify text to clarify the relationship between the CWP and community plans, replace the Housing Overlay District with a Housing Element Overlay, etc.);
- Changes to policies specific to regional sites to accommodate increased densities on sites such as the St. Vincent's/Silveira and the Buck Center sites;
- Changes to policies related to community plans (to clarify that CWP would govern if there are differences with respect to standards in community plans that are inconsistent with state law);
- Changes to transportation policy to eliminate restrictions on residential development based on LOS standards;
- Changes to the zoning map land use designations (where needed) to accommodate the development intensity needed to satisfy the RHNA;
- Rezoning of properties to achieve consistency with the 2007 CWP; and
- Zoning text amendments and development code amendments to ensure procedures and standards are in place to support development needed to satisfy the RHNA in compliance with State Law (Objective Development Standards).

## 1.3 PROGRAM EIR APPROACH AND ANALYSIS METHODOLOGY

### 1.3.1 Program EIR

This EIR has been prepared as a program EIR. A program EIR is a type of EIR authorized by section 15168 (Program EIR) of the State CEQA Guidelines for use in documenting the environmental impacts of community general plans, specific plans, precise plans, and other planning "programs." As explained in the State CEQA Guidelines, a program EIR is useful in evaluating the potential environmental impacts of a project that involves a series of interrelated actions that can reasonably be characterized as a single project.

CEQA distinguishes between project and program EIRs, defining a program EIR as one that addresses a series of actions that can be characterized as one large project and can be related (1) geographically; (2) as logical parts in the chain of contemplated actions; (3) in connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways.

The advantages of a program EIR include consideration of effects and alternatives that cannot practically be reviewed at the level of an individual development project; consideration of cumulative impacts that may not be apparent on a project-by-project basis; the ability to enact countywide mitigation measures; and subsequent reduction in paperwork.

This EIR describes the reasonably foreseeable countywide impacts of the Project. Further, this EIR describes the cumulative, aggregate effects of the Project and describes impacts at a level of detail consistent with the level of detail of the proposed Project.

This EIR was prepared under the direction of Marin County and is provided for review by both the public and public agencies, as required by CEQA. The Board of Supervisors must certify the Final EIR prior to adoption of the Project.

The new and revised policies and programs proposed as part of the Project also may address potential environmental impacts. Each EIR environmental topic chapter (e.g., Aesthetics, Land Use and Planning, Utilities and Service Systems) includes a section titled “Proposed Policies and Actions to Avoid or Reduce Significant Impacts,” which identifies these new or revised policies and programs proposed to be part of the Housing Element Update and Safety Element Update that will avoid or reduce potential environmental impacts for that particular environmental topic.

In accordance with the definition of a “program EIR” (State CEQA Guidelines section 15168), the EIR evaluates the potential environmental impacts of the collective, overall development potential and not the future site-specific impacts of any individual development project, the details of which are not known at this time.

### **1.3.2 Intended Uses of the EIR**

This EIR provides the environmental review required for the County to approve the Project, which, as explained above, is comprised of: (1) updates to the Housing Element and Safety Element of the 2007 CWP as mandated by the requirements for General Plans in State Planning and Zoning Law; (2) associated amendments to other elements in the 2007 CWP as necessary to ensure consistency; and (3) amendments to the Marin County Code to provide for effective implementation of the Project. In order to approve the Project, the Board of Supervisors will need to certify that the Final Environmental Impact Report complies with CEQA, make Findings, adopt a Mitigation Monitoring and Reporting Program, and adopt a Statement of Overriding Considerations.

The adoption of the proposed Housing and Safety Elements Update would not result in the immediate construction of any new development or approval of any new site-specific project. All future development projects proposed within the County Planning Area that require discretionary approval by the County would require site-specific applications subject to the County’s development review and approval processes, including environmental documentation to comply with CEQA, where applicable, and other environmental requirements (e.g., County, State). Non-discretionary (ministerial) projects must be consistent with State and County requirements. Public projects would be required to be consistent with CWP policies and would be required to comply with CEQA; compliance with the County Development Code would not be mandatory.

Subsequent activities undertaken by the County and applications for future development projects to implement the Housing and Safety Element Updates will be examined for

consistency with this program EIR to determine the appropriate level of environmental review required under CEQA. Such subsequent implementation activities may include the following:

- Updating and approval of community and area plans or other associated development plans and planning documents
- Approval of tentative maps, variances, conditional use permits, and other land use permits and entitlements
- Approval of development agreements
- Approval of facility and service master plans and financing plans
- Approval and funding of public improvement projects
- Approval of resource management plans
- Issuance of permits and other approvals necessary for implementation of the Countywide Plan
- Issuance of permits and other approvals necessary for public and private development projects
- Future amendments to the County's Housing Element and other 2007 CWP Elements

In addition, as the Lead Agency, the County also intends this EIR to serve as the CEQA-required environmental documentation for consideration by other agencies that may have discretionary authority over future projects affected by the Housing and Safety Element Update (e.g., State Coastal Commission, California Department of Fish and Wildlife, California Department of Transportation).

### **1.3.3 Use of the EIR for Review of Future Development Proposals**

Future site-specific development facilitated by the Project, but which has not yet been described at a project-specific level of detail, will be evaluated for consistency with this EIR if and when the development is proposed. As with all projects proposed in the unincorporated areas of the County, projects will be reviewed to determine whether they are subject to CEQA compliance at such time as the County receives a permit application for the project and the details of the individual project are defined. At that time, and if the project is subject to CEQA, the environmental analysis would address impacts (if any) specific to the project such as effects on the local transportation system (e.g., roadway safety, pedestrian and bicycle facilities, public transit); ability of service providers to serve the project; consistency with CWP policies; consistency with building and engineering regulations of the County; site-specific biological, cultural resource, and visual effects; impacts on on-site and off-site drainage.

This program EIR has been prepared to allow for streamlining future CEQA compliance by providing program-level information and data about the housing sites, and by identifying potentially significant environmental impacts and associated mitigation measures that may be used in analyzing future site-specific, discretionary development projects. For example, the mitigation measures in the EIR contain specific actions and performance standards that must be implemented for site-specific, individual development projects and public improvements. Environmental review of future projects could proceed pursuant to State CEQA Guidelines sections 15168 (Program EIR), 15183 (Projects Consistent With a Community Plan, General Plan, or Zoning), 15183.3 (Streamlining for Infill Projects), 21094 (Later Projects; Tiered Environmental Impact Reports; Initial Study; Use of Prior Reports), 15152 (Tiering), 15162

(Subsequent EIRs and Negative Declarations), 15163 (Supplement to an EIR), 15164 (Addendum to an EIR or Negative Declaration), other CEQA streamlining provisions, or Public Resources Code Section 21155.4 (Implementation of the Sustainable Communities Strategy). As explained above, any such individual discretionary project would be subject to County review, and may also require its own CEQA review, including evaluation for consistency with this EIR.

If, during review of a subsequent project subject to CEQA, the County determines that (1) the individual project is within the scope of the program examined in the program EIR, (2) no new effects that are not otherwise examined in the program EIR will occur as a result of the individual project, and (3) no new mitigation measures are required, then no additional environmental review will be required for that project. If these conditions are not met and a subsequent EIR or negative declaration is required, this program EIR can (1) provide the basis in an initial study for determining whether the later activity may have any significant effects, (2) be incorporated by reference in the new environmental document to deal with regional influences, secondary effects, cumulative impacts, broad alternatives, and other factors that apply to the program as a whole, or (3) focus an EIR on a subsequent project to permit discussion solely of new effects which had not been considered before. (State CEQA Guidelines section 15168)

#### **1.3.4 Analysis Methodology**

A. Impact Assessment Assumptions. This program EIR evaluates the reasonably foreseeable environmental consequences of development under the Housing Element Update by the year 2031 and activities facilitated by the Safety Element Update, and identifies mitigation measures and alternatives that could avoid or reduce potentially significant adverse environmental impacts and increase beneficial effects.<sup>9</sup> Based on Marin County's RHNA, assigned by the Association of Bay Area Governments (ABAG), and on recommendations by the California Department of Housing and Community Development (HCD) to include additional sites as a buffer that would ensure the County's sites inventory maintains sufficient capacity to accommodate the RHNA throughout the planning period, the County has identified a Proposed Project Sites Inventory with a development capacity of 5,214 housing units, which includes (1) the 3,569 units to meet the RHNA, (2) the HCD-recommended buffer to ensure an adequate number of sites, and (3) additional units that may be proposed under State Density Bonus law.

The Proposed Project Sites Inventory was drawn from a longer list of "Candidate Housing Sites" that included more than 150 sites that could support the potential for up to 10,993 units. In addition to evaluating the Proposed Project Sites Inventory, the EIR also provides environmental information about the "candidate housing sites" to allow for informed consideration of alternative approaches to satisfying the RHNA in the event that any of the Project Sites prove infeasible or undesirable due to potential for environmental impact or lack of development during the 8-year cycle. Additional constraints to housing development identified by the County were taken into consideration to ensure distribution of the sites throughout the county, address racial equity and historic patterns of segregation, encourage infill and redevelopment opportunities, and consider environmental hazards.

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<sup>9</sup>CEQA Guidelines section 15149(b).



As discussed in Chapter 3, Project Description, this preliminary assessment of candidate housing sites was used to determine which sites to consider further for the 2023 to 2031 planning period. The list of candidate sites was intended to present a greater number of sites than required by the RHNA plus buffer to help expedite the review and approval of the Housing Element Update and to provide CEQA review for potential housing sites throughout unincorporated Marin County. The impact analysis in this EIR considers the following factors to present the most accurate and precise evaluations of potential environmental impacts:

- Impacts that would employ the same mitigation measures regardless of scale, which are determined largely based on location and its relation to the resource potentially affected (e.g., biological resources require California Department of Fish and Wildlife review, wetland fill requires U.S. Army Corps of Engineers permit).
- Impacts that are measured per capita and would potentially fluctuate depending on the size of the population being considered or where the per capita data provide more accurate analysis with larger sampling sizes (e.g., traffic model inputs).
- Mitigations that are scalable and more precisely reflect project impacts (e.g., utilities sized to serve a project or area).

**B. Impact Assessment Baseline.** State CEQA Guidelines sections 15125(a) and (e) state that the existing environmental setting (the physical environmental conditions in the project vicinity when the Notice of Preparation [NOP] is published or the environmental analysis begun) normally constitutes the baseline physical conditions for determining whether an impact is significant. The NOP for this EIR was published on December 8, 2021.<sup>10</sup> Consistent with this guideline, all impact evaluations in this EIR use the “Setting” section of each environmental topic chapter (e.g., Air Quality, Noise, Transportation) to describe the existing environmental conditions in terms of what is on the ground now and not what might be on the ground if the Project is not adopted. These existing conditions are the starting point (baseline) from which impacts resulting from the Project are identified and evaluated. Therefore, the environmental effects of future potential development facilitated by the Project are compared to existing conditions to identify potential impacts resulting from Project implementation.

For a comparison of impacts from the proposed Project compared to buildout of the current CWP, see the discussion of Alternative 1 (No Project – Existing Countywide Plan) in Chapter 22, Alternatives to the Proposed Project.

### 1.3.5 Effects of the Environment on the Project

The California Supreme Court decision (December 2015) in *California Building Industry Association v. Bay Area Air Quality Management District* concluded, “[W]e hold that CEQA does not generally require an agency to consider the effects of existing environmental conditions on a

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<sup>10</sup>The Notice of Preparation (NOP) is a CEQA-required notice sent by the Lead Agency to notify Responsible Agencies, Trustee Agencies, and potentially involved Federal agencies that the Lead Agency plans to prepare an EIR for the project. The NOP initiates the EIR scoping process and is used to solicit guidance regarding the scope and content of the EIR. The County’s NOP for the Housing and Safety Element Update to the 2007 Marin Countywide Plan, and comment letters and/or emails received on the NOP, are included in EIR Appendix A. In addition, a public scoping meeting was held during the NOP 30-day review period (January 11, 2022) to solicit input. Also included in Appendix A is a summary of questions answered during the scoping meeting.

proposed project's future users or residents. What CEQA does mandate...is an analysis of how a project might exacerbate existing environmental hazards." The lead agency may choose to analyze and disclose potential effects of existing environmental conditions on its own projects, however. The environmental impact analysis in this EIR accordingly includes the effects of existing environmental conditions for informational purposes.

#### 1.4 "SIGNIFICANT IMPACTS" AND OTHER KEY EIR TERMINOLOGY

This EIR identifies adverse environmental impacts that are expected to be "significant" and mitigation measures designed to avoid or reduce those impacts to less-than-significant levels or, if less-than-significant levels cannot feasibly be achieved, to reduce the significant impacts to the extent feasible. Where the EIR determines that a particular impact is significant, then the impact and mitigation measures are indicated by enclosing the relevant text in a box.

For example, if the EIR determines that a particular impact is *significant*, then the impact and its mitigation are indicated by enclosing the relevant text in a box.

Where the EIR determines that a particular impact cannot be mitigated to a less-than-significant level, the EIR identifies that impact as "significant and unavoidable." EIR Chapter 21, Other CEQA and Social-Economic Analysis, includes a list of all significant unavoidable project impacts of the Project. Identified significant impacts that are not listed in Chapter 21 as unavoidable can be mitigated to a less-than-significant level by implementation of the mitigation measure(s) identified in this EIR. The individual environmental topic chapters provide more detail. Also see Chapter 23, Mitigation Monitoring and Reporting Program.

State CEQA Guidelines Section 15130 requires that an EIR consider and discuss the cumulative impacts of a project when the project's incremental effect is cumulatively considerable. A cumulative impact is the result of the combination of the impacts resulting from the project together with other projects causing related impacts (section 15130). The cumulative impacts of each environmental topic are included at the end of the impact discussion in each chapter. In the case of vehicle miles traveled, greenhouse gas emissions, and quantitative utilities (water supply, wastewater generation, and stormwater volumes), impact analyses and conclusions are, by definition, cumulative because a Project impact would affect physical environmental conditions beyond the unincorporated County.

The EIR terms used above ("significant," "unavoidable," "mitigation," "cumulative") and other key CEQA terminology used in this EIR are defined in Table 1-1.

**Table 1-1:  
Definitions of Key EIR Terminology**

<b>Significant Impact</b>	"Significant effect on the environment" (significant impact) means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic and aesthetic significance. <i>"An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant."</i> (State CEQA Guidelines, section 15382)
<b>Cumulative Impacts</b>	"Cumulative impacts" are defined as <i>"two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."</i> (State CEQA Guidelines, section 15355)
<b>Significant Unavoidable Impact</b>	"Significant unavoidable impact" is defined as a significant adverse environmental impact for which either no mitigation or only partial mitigation is feasible. If the project is to be approved without imposing an alternative design, the Lead Agency must include in the record of the project approval a written statement of the specific reasons to support its action – i.e., a "statement of overriding considerations." (State CEQA Guidelines, sections 15126.2[c] and 15093[b])
<b>Thresholds of Significance</b>	The "thresholds of significance" used in this EIR to determine whether an impact is or is not "significant" are based on (a) CEQA-defined "mandatory findings of significance" – i.e., where any of the specific conditions occur under which the Legislature and the Secretary of Resources have determined constitute a potentially significant effect on the environment, which are listed in State CEQA Guidelines section 15065; (b) specific criteria that a Resources Agency has determined are "normally" considered to constitute a "significant effect on the environment"; (c) the relationship of the project effect to the adopted policies, ordinances, and standards of the Lead Agency and of responsible agencies; and/or (d) commonly accepted practice and the professional judgment of the EIR authors and Lead Agency staff.
<b>Mitigation Measure</b>	For each significant impact, the EIR must identify a specific "mitigation" measure or set of measures capable of <i>"(a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the impacted environment; (d) reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or (e) compensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements."</i> (State CEQA Guidelines, section 15370)

Source: MIG, 2022.

## 1.5 EIR ORGANIZATION AND CONTENT

After this introduction, the EIR is organized into the following chapters:

Chapter 2 – Summary, which presents an overview of the report organization, the type and purpose of the EIR, a summary of the proposed Project, a brief description of alternatives to the proposed Project evaluated in Chapter 22, areas of concern and/or controversy, a summary of impacts and mitigation measures in table format, and an overview of the Mitigation Monitoring and Reporting Program discussed in more detail in Chapter 23.

Chapter 3 – Project Description, which describes the Project in greater detail, identifies the project objectives, and lists the required approvals to certify the EIR and approve the Project.

Chapters 4 (Aesthetics) through 20 (Wildfire), which contain the environmental analysis for each of the 17 topical impact areas and include the following subsections:

- *Environmental Setting*, which describes existing conditions related to the environmental topic;
- *Regulatory Setting*, which describes Federal, State, and local laws, regulations and policies relevant to potential impacts for the environmental topic; and
- *Impacts and Mitigation Measures*, including:
  - *Thresholds of Significance*, which identifies the State CEQA and other agency-recommended criteria for determining the significance of a potential impact;
  - *Proposed Policies and Actions to Avoid or Reduce Significant Impacts*, which identifies new or revised policies and programs proposed as part of the Housing Element Update and Safety Element Update that help to make the Project self-mitigating for some impact topics and therefore not require mitigation measures for potential impacts related to these environmental topics;
  - *Impacts and Mitigations*, which identifies potential Project impacts; whether each identified environmental effect is a “significant” impact or “less than significant”; mitigation measures for each identified “significant” impact; and whether each impact would be “significant” or “less than significant” after mitigation; and
  - *Cumulative Impacts*, which discusses whether the project would make a cumulatively considerable contribution to a cumulative impact for each impact topic.

Chapter 21 – Other CEQA and Social-Economic Analysis, which includes a discussion of cumulative impacts, a discussion of significant environmental effects that cannot be avoided, growth-inducing impacts, significant irreversible environmental changes, and for informational purposes only a discussion of economic and social information<sup>11</sup> related to the Housing and Safety Element Updates, consistent with State CEQA Guidelines Section 15131.

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<sup>11</sup>A discussion of social and economic effects is not mandated by CEQA but provided at the County’s discretion for information purposes.

Chapter 22 – Alternatives to the Proposed Project, which describes a range of reasonable alternatives to the Project that would feasibly attain most of the basic Project objectives but would avoid or substantially lessen any of the significant effects of the project, consistent with State CEQA Guidelines Section 15126.6. This Chapter also evaluates the comparative merits of the alternatives and describes alternatives considered but rejected for further analysis, and identifies the environmentally superior alternative.

Chapter 23 – Mitigation Monitoring and Reporting Program, which describes the program for monitoring or reporting on the identified mitigation measures to ensure that the mitigation measures are implemented in compliance with Public Resources Code Section 21081.6 and State CEQA Guidelines Section 15097.

Chapter 24 – Organizations and Persons Contacted, which includes County staff consulted during preparation of the EIR and other individuals from agencies and organizations who provided information and assistance for this EIR.

Chapter 25 – EIR Preparers, which identifies the people responsible for preparing the report.

The EIR Appendices include supplemental information in support of the analysis in the EIR chapters outlined above.

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## 2. SUMMARY

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This Chapter summarizes the findings of this Draft EIR. It provides a summary of the Project; environmental issues and areas of controversy; a table listing of the Project's impacts, mitigation, and level of significance after mitigation; and a brief discussion of the alternatives studied, pursuant to State CEQA Guidelines Section 15123, Summary. This Chapter also provides a discussion of areas of known controversy and issues to be resolved, major EIR conclusions, and the mitigation monitoring program.

*This summary should not be relied upon for a thorough understanding of the details of the Project, its individual impacts, and related mitigation needs. Please refer to Chapter 3 for a complete description of the Project, Chapters 4 through 20 for a complete description of environmental impacts and associated mitigation measures, Chapter 21 for other CEQA and social economic analysis sections, and Chapter 22 for an evaluation of alternatives to the Project.*

### 2.1 REPORT ORGANIZATION

The EIR is organized into the following chapters:

Chapter 1 – Introduction, which describes the purpose and intended use of the EIR, a brief overview of the Project, the EIR approach and analysis methodology, key EIR terminology, and general discussion of the EIR content.

Chapter 2 – Summary (this chapter), which presents an overview of the report organization, the type and purpose of the EIR, a summary of the proposed Project, a brief description of alternatives to the proposed Project evaluated in Chapter 22, areas of concern and/or controversy, a summary of impacts and mitigation measures in table format, and an overview of the Mitigation Monitoring and Reporting Program discussed in more detail in Chapter 23.

Chapter 3 – Project Description, which describes the Project in greater detail, identifies the Project objectives, and lists the required approvals to certify the EIR and approve the Project.

Chapters 4 (Aesthetics) through 20 (Wildfire), which contain the environmental analysis for each of the 17 topical impact areas and include the following subsections:

*Environmental Setting*, which describes existing conditions related to the environmental topic;

*Regulatory Setting*, which describes Federal, State and local laws, regulations and policies relevant to potential impacts for the environmental topic; and

*Impacts and Mitigation Measures*, including:

*Thresholds of Significance*, which identifies the State CEQA and other agency-recommended criteria for determining the significance of a potential impact;

- *Proposed Policies and Actions to Avoid or Reduce Significant Impacts*, which identifies new or revised policies and programs proposed as part of the Housing Element Update and Safety Element Update that help to make the Project self-mitigating for some impact topics and thus not require mitigation measures for potential impacts related to these environmental topics;
- *Impacts and Mitigations*, which identifies potential Project impacts; whether each identified environmental effect is a “significant” impact or “less-than-significant”; mitigation measures for each identified “significant” impact; and whether each impact would be “significant” or “less-than-significant” after mitigation; and
- *Cumulative Impacts*, which discusses whether the project would make a cumulatively considerable contribution to a cumulative impact for each impact topic.

Chapter 21 – Other CEQA and Social-Economic Analysis, which includes a discussion of cumulative impacts, a discussion of significant environmental effects that cannot be avoided, growth-inducing impacts, significant irreversible environmental changes, and for informational purposes only a discussion of economic and social information<sup>1</sup> related to the Housing and Safety Element Updates, consistent with State CEQA Guidelines Section 15131.

Chapter 22 – Alternatives to the Proposed Project, which describes a range of reasonable alternatives to the Project that would feasibly attain most of the basic Project objectives but would avoid or substantially lessen any of the significant effects of the project, consistent with State CEQA Guidelines Section 15126.6. This Chapter also evaluates the comparative merits of the alternatives and describes alternatives considered but rejected for further analysis, and identifies the environmentally superior alternative.

Chapter 23 – Mitigation Monitoring and Reporting Program, which describes the program for monitoring or reporting on the identified mitigation measures to ensure that the mitigation measures are implemented in compliance with Public Resources Code Section 21081.6 and State CEQA Guidelines Section 15097.

Chapter 24 – Organizations and Persons Contacted, which includes County staff consulted during preparation of the EIR and other individuals from agencies and organizations who provided information and assistance for this EIR.

Chapter 25 – EIR Preparers, which identifies the people responsible for preparing the report.

The EIR Appendices include supplemental information in support of the analysis in the EIR chapters outlined above.

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<sup>1</sup>A discussion of social and economic effects is not mandated by CEQA but provided at the County’s discretion for information purposes.



## **2.2 TYPE AND PURPOSE OF EIR**

### **2.2.1 Type of EIR**

This EIR has been prepared as a program EIR for the Housing Element Update and Safety Element Update to the CWP (which is the County's general plan). A program EIR is a type of EIR authorized by Section 15168 (Program EIR) of the State CEQA Guidelines for use in documenting the environmental impacts of community general plans, specific plans, precise plans, and other planning "programs."

CEQA distinguishes between project and program EIRs, defining a program EIR as one that addresses a series of actions that can be characterized as one large project and can be related (1) geographically; (2) as logical parts in the chain of contemplated actions; (3) in connection with the issuance of rules, regulations, plans, or other general criteria to govern the conduct of a continuing program; or (4) as individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects that can be mitigated in similar ways.

This EIR describes the reasonably foreseeable countywide impacts of the Project. Further, this EIR describes the cumulative, aggregate effects of the Project along with other reasonably foreseeable projects, and describes impacts at a level of detail consistent with the level of detail of the proposed Project, which consists of updates to two elements of the CWP, associated amendments to other portions of the CWP, and associated amendments to the Marin County Code.

This EIR was prepared under the direction of Marin County and is provided for review by both the public and public agencies, as required by CEQA. The Board of Supervisors must certify the Final EIR prior to adoption of the Project.

In accordance with the definition of a "program EIR" (State CEQA Guidelines Section 15168), the EIR evaluates the potential environmental impacts of the collective, overall development potential and not the future site-specific impacts of any individual development project, the details of which are not known at this time.

### **2.2.2 Purpose of the EIR**

This EIR provides the environmental review required for the County to approve the Project which, as explained above, is comprised of: (1) updates to the Housing Element and Safety Element of the 2007 CWP as mandated by the requirements for General Plans in State Planning and Zoning Law; (2) associated amendments to other elements in the 2007 CWP as necessary to ensure consistency; and (3) amendments to the Marin County Code to provide for effective implementation of the Project. In order to approve the Project, the Board of Supervisors will need to certify that the Final Environmental Impact Report complies with CEQA, make Findings, adopt a Mitigation Monitoring and Reporting Program, and adopt a Statement of Overriding Considerations.

The adoption of the proposed Housing and Safety Elements Update would not result in the immediate construction of any new development or approval of any new site-specific project. All future development projects proposed within the County planning area that require discretionary approval by the County would require site-specific applications subject to the County's development review and approval processes, including environmental documentation to comply

with CEQA, where applicable, and other environmental requirements (e.g., County, State). Non-discretionary (ministerial) projects must be consistent with State and County requirements. Public projects would be required to be consistent with CWP policies and would be required to comply with CEQA; compliance with the County Development Code would not be mandatory.

Subsequent activities undertaken by the County and applications for future development projects to implement the Housing and Safety Element Updates will be examined for consistency with this program EIR to determine the appropriate level of environmental review required under CEQA.

In addition, future site-specific development facilitated by the Project, but which has not yet been described at a project-specific level of detail, will be evaluated for consistency with this EIR if and when the development is proposed. As with all projects proposed in the unincorporated areas of the County, projects will be reviewed to determine whether they are subject to CEQA compliance at such time as the County receives a permit application for the project and the details of the individual project are defined.

This program EIR has been prepared to allow for streamlining future CEQA compliance by providing program-level information and data about the housing sites, and by identifying potentially significant environmental impacts and associated mitigation measures that may be used in analyzing future site-specific development projects. For example, the mitigation measures in the EIR contain specific actions and performance standards that must be implemented for site-specific, individual development projects and public improvements. Environmental review of future projects could proceed pursuant to State CEQA Guidelines Sections 15168 (Program EIR), 15183 (Projects Consistent With a Community Plan, General Plan, or Zoning), 15183.3 (Streamlining for Infill Projects), 21094 (Later Projects; Tiered Environmental Impact Reports; Initial Study; Use of Prior Reports), 15152 (Tiering), 15162 (Subsequent EIRs and Negative Declarations), 15163 (Supplement to an EIR), 15164 (Addendum to an EIR or Negative Declaration), other CEQA streamlining provisions, or Public Resources Code Section 21155.4 (Implementation of the Sustainable Communities Strategy). As explained above, any such individual discretionary project would be subject to County review, and may also require its own CEQA review, including evaluation for consistency with this EIR.

If, during review of a subsequent project subject to CEQA, the County determines that (1) the individual project is within the scope of the program examined in the program EIR, (2) no new effects that are not otherwise examined in the program EIR will occur as a result of the individual project, and (3) no new mitigation measures are required, then no additional environmental review will be required for that project. If these conditions are not met and a supplemental or subsequent EIR or negative declaration is required, this program EIR can (1) provide the basis in an initial study for determining whether the later activity may have any significant effects, (2) be incorporated by reference in the new environmental document to deal with regional influences, secondary effects, cumulative impacts, broad alternatives, and other factors that apply to the program as a whole, or (3) focus an EIR on a subsequent project to permit discussion solely of new effects which had not been considered before. (State CEQA Guidelines Section 15168)

### 2.2.3 Environmental Topics Covered

The environmental topics addressed in this EIR are:

- Aesthetics
- Agricultural and Forestry Resources
- Air Quality
- Biological Resources
- Cultural, Tribal Cultural, and Historic Resources
- Geology and Soils
- Greenhouse Gas Emissions and Energy
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services and Recreation
- Transportation
- Utilities and Service Systems
- Wildfire

## 2.3 SUMMARY OF THE PROPOSED PROJECT

### 2.3.1 Overview

The proposed Project is comprised of updates to the Housing Element and Safety Element of the 2007 Marin Countywide Plan (2007 CWP) in compliance with the requirements for General Plans in State Planning and Zoning Law; associated amendments to other elements in the CWP as necessary to ensure consistency; and amendments to the Marin County Code to provide for effective implementation of the project (collectively the “Project”), and is described in more detail in Chapter 3, Project Description, of this EIR.

The Project proposes goals, policies, and programs that will provide County staff and discretionary bodies with a foundation for decisions related to long-range planning for housing development and safety related to climate change.

Marin County has prepared an update to the Housing Element (Housing Element Update) for the planning period 2023 through 2031. The County has also prepared an update to the Safety Element (Safety Element Update). Both updates will be adopted as amendments to and incorporated into the 2007 CWP.

### 2.3.2 Project Background

The County began the process of updating the Housing and Safety Elements in late summer/early fall 2021. The initial site identification process studied over 150 possible candidate housing sites and included opportunity sites suitable for residential development, including vacant sites and sites having the potential for redevelopment that can be developed for housing within the Housing Element planning period of 2023 through 2031. The 150 candidate housing sites contained a development potential that would allow up to 10,993 units that the Marin County Planning Commission and Board of Supervisors could select from to identify sites that could be used to meet the County's RHNA of 3,569 units.

The Planning Commission and Board of Supervisors hosted a series of workshops to develop guiding principles that would direct the site selection process, evaluate scenarios that tested how well different approaches addressed guiding principles, to receive input on the issues and merits of specific sites, and to collect feedback on proposed policies and programs. Existing environmental conditions and likely constraints were considered. Sites were also identified throughout the community to address fair housing and to address historic patterns of segregation. In addition, State law considerations were included in the evaluation, such as lot size, default density, development trends and potential, recycling of prior sites, development on non-vacant sites, and "no net loss" requirements that ensure development opportunities remain available throughout the planning period to accommodate a jurisdiction's RHNA by providing additional sites for lower and moderate income categories.

In April 2022, after conducting workshops in November of 2021, January 2022, and March 2022, the Planning Commission and Board of Supervisors endorsed the "Proposed Project Sites" identified in Figure 3.5 and Table 3-2 for analysis in the Environmental Impact Report. The Proposed Project Sites identified by the County would be sufficient to meet the County's RHNA of 3,569 units and also would provide for extra units to create a buffer in the housing inventory of at least 15 to 30 percent more capacity than required, as recommended by the California Department of Housing and Community Development. An additional 1,286 units are included for applicants requesting a 35 percent density bonus, bringing the total proposed units for the Project to 5,214 units. The final site selection will be made by the Marin County Planning Commission and Board of Supervisors as part of the Housing and Safety Element adoption process.

During the Housing Element Update process discussed above, the County also coordinated preparation of the updates to the Safety Element, which included public workshops to present countywide safety issues and collect community feedback. The Safety Element update is required by new State laws for local governments to update their safety elements alongside their housing element updates. State law requires safety elements to address protection of its people from unreasonable risks associated with disasters, including earthquakes, floods, fires, and landslides. Other locally relevant safety issues, such as airport land use, emergency response, and hazardous materials spills may also be included. New state laws also require safety elements to address climate change resilience.

The Safety Element lays the groundwork for countywide hazard planning and programming and identifies measure to minimize impacts of environmental hazards. Consistent with state guidance on incorporating climate adaptation strategies and implementation measures into safety elements, Marin County is preparing a vulnerability assessment to determine public safety risks from climate change, including flooding, wildfire, drought, extreme heat, sea level rise, and storm activity.

The draft Safety Element was circulated for public comments on June 1, 2022, and the comment period closed on June 30, 2022. The draft Safety Element was also sent to the State Department of Forestry for review and approval on June 2, 2022. It was approved with edits by the Board of Forestry on September 22, 2022.

### **2.3.3 Housing Element Update**

The Housing Element Update consists of the following five chapters:

1. Introduction
2. Housing Needs Analysis
3. Housing Constraints
4. Resources
5. Goals, Policies, and Programs

In addition, the Housing Element Update includes four appendices: (1) Appendix A, community outreach efforts conducted; (2) Appendix B, review of the 2015 Housing Element; (3) Appendix C, sites inventory; and (4) Appendix D, a comprehensive discussion of the County's commitment to specific meaningful actions to affirmatively furthering fair housing.

### **2.3.4 Safety Element Update**

The 2007 CWP does not contain an adopted "Safety Element" as a standalone document but does contain policies and programs that address the required contents of a safety element, in compliance with State law. These policies and programs are contained in The Natural Systems and Agriculture, The Built Environment, and The Socioeconomic Elements. The currently adopted policies and programs in CWP Section 2.6 – Environmental Hazards address geologic, flooding, and wildfire hazards and are being updated to comply with new state requirements to include climate change and resiliency planning, as well as new requirements to further address sea level rise, flooding, and wildfire hazards. The proposed "Safety Element Update" includes new policies and programs, and revisions to already adopted Environmental Hazards policies and programs, in compliance with new State laws. Collectively, this content comprises the Safety Element Update, which is part of the Project being evaluated in this EIR. Updated Section 2.6 of the CWP is now considered the County's "Safety Element," as explained in the first paragraph of that section.

The Safety Element Update is comprised of the following sections:

1. A background section
2. A section titled What is a Safety Element?
3. Other Documents Incorporated by Reference
4. Additional Reference Documents
5. A section titled Marin County Hazards

## 2.4 SUMMARY OF ALTERNATIVES

To provide a basis for further understanding of the environmental effects of a proposed project and possible approaches to reducing its identified significant impacts, the CEQA Guidelines require an EIR to also "...describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives."

Pursuant to CEQA, Chapter 22 identifies and evaluates the following three alternatives to the Project:

- **Alternative 1: No Project – Existing Countywide Plan.** State CEQA Guidelines Section 15126.6(e) requires an EIR to analyze the specific alternative of "No Project." The purpose of describing and analyzing the No Project alternative is to allow decision makers to compare the impacts of approving a proposed project with the impact of not approving the proposed project. The No Project Alternative shall discuss the existing conditions at the time the EIR notice of preparation is published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.
- Additionally, State CEQA Guidelines Section 15126.6(e)(3)(a) states that when the project is the revision of an existing land use or regulatory plan, the "No Project" alternative will be the continuation of the existing plan. Typically, this is a situation where new projects would be proposed under the existing plan. Thus, the impacts of the proposed project would be compared to the impacts that would occur under the existing plan.
- **Alternative 2: Reduced VMT Alternative.** The Reduced VMT Alternative would locate most of the proposed housing sites, except those screened out by the Governor's Office of Planning and Research "Technical Advisory on Evaluating Transportation Impacts in CEQA" (December 2018), to within an approximate two-mile radius of the U.S. 101 corridor, including 0.5 miles on either side of Sir Francis Drake Boulevard to Fairfax. The intent of this alternative is to reduce the significant unavoidable vehicle miles traveled (VMT) impact, and the resulting significant unavoidable air quality and GHG impacts, by lowering the average per capita VMT. This alternative would place more housing sites nearer to the urban core of Marin County and closer to transit and employment, and remove some potential housing sites that are in the more rural areas of the unincorporated county. Compared to other parts of the county, the urban core of Marin County would (1) tend to have lower VMT per capita, and (2) have substantially better VMT mitigation options available because of proximity to mass transit and other transportation demand management (TDM) solutions. This alternative would result in lower VMT per capita than the proposed Project; however, it would still result in significant unavoidable VMT, air quality, and GHG impacts.
- **Alternative 3: Reduced Utility Impact Alternative (Water & Wastewater).** The Reduced Utility Impact Alternative would relocate housing sites from service districts that do not have the capacity to serve new development to areas closer to the City-Centered/Baylands Corridor where water and wastewater service providers have greater capacity to serve new development. This alternative would also relocate housing sites that would require significant infrastructure improvements in order to avoid the impacts

of infrastructure construction. This alternative focuses on reducing impacts on the environment due to construction of new infrastructure for public utility districts providing water or wastewater treatment to unincorporated areas of Marin County.

## 2.5 AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

As required by the State CEQA Guidelines, on December 8, 2021, the County of Marin circulated a “Notice of Preparation and Notice of Public Scoping Session” to obtain information from local, regional, State, and involved Federal agencies and members of the public, on the content and scope of the environmental analysis to be included in EIR for the Housing Element and Safety Element Updates to the 2007 Countywide Plan. The comment period extended until January 24, 2022. In response to the NOP, the County received 12 letters of comment.

**Table 2-1:  
Written Comments in Response to the NOP**

# of Letters Received	Letter Date	Date Received	Company	Commentor’s Name
			<b>State Agencies</b>	
1	12/16/2021	12/16/2021	Native American Heritage Commission	Katy Sanchez
1	1/20/2022	1/21/2022	CA Dept of Fish and Wildlife	Erin Chappell
1	1/20/2022	1/24/2022	Caltrans	Mark Leong
			<b>Local Groups</b>	
2	1/11 & 1/13	1/23 & 1/13	California Native Plant Society	Laura Lovett
1	1/11/2022	1/24/2022	Marin Biodiversity Corridor Initiative	Dr. Paul G. da Silva
			<b>Individuals</b>	
1	1/4/2022	1/4/2022		Suzanne Sadowsky
1	1/10/2022	1/10/2022		Jenny Silva
1	1/11/2022	1/11/2022		Kathryn Peisert
1	1/11/2022	1/11/2022		Mary Miller
1	1/13/2022	1/13/2022		Peter Newman
1	1/24/2022	1/24/2022		Jon Metcalf

Issues and related topics raised in the NOP response letters included:

1. Katy Sanchez, Native American Heritage Commission

AB 52 and SB 18 requirements; recommends lead agency consult with local Native American tribes; procedures etc.; related to disturbance of Native American cultural and tribal cultural resources.

2. Erin Chappell, California Department of Fish and Wildlife

Regulatory requirements outlined, including CESA, Native Plant Protection, Lake and Stream Alteration, Nesting Birds; calls for baseline habitat assessments; discusses impact analysis protocols, data repositories, and fees; includes Special-Status Species list.

3. Mark Leong, Caltrans

Need for ravel demand analysis and VMT analysis.

4. Laura Lovett, California Native Plant Society

(1) First letter requests that native trees be planted on all streetscapes and in public gardens because they are essential to retaining biodiversity;

(2) second letter repeats item (1); urges green building materials and less concrete; promotes ecological design and acknowledging the worldwide environmental crisis through conservation and restoration of native species, reduced emission and increased carbon sequestration, and reductions in air pollution, water pollution and solid waste production; additional emphasis on use of native plants.

5. Dr. Paul G. da Silva, Marin Biodiversity Corridor Initiative

Background discussion of global biodiversity crisis; suggestions for increasing biodiversity, including: increase total amount of areas dedicated to living plants; increase total proportions of native plants; and increase heterogeneity of habitat.

6. Suzanne Sadowsky

Will the scoping session address environment issues pertaining to stream conservation in the San Geronimo Valley, waste water treatment issues regarding septic failures the Valley and possibilities of a new community waste treatment facility in the Valley (Woodacre Flats) and also alternatives to water based residential toilets, e.g. incinerated toilets, and possibilities for expanded grey water systems.

7. Jenny Silva

Reconsider land use policies to reduce our car dependency, safe routes to school.

8. Kathryn Peisert

Where will the extra water come from for these new residents; can the new housing be carbon neutral and/or LEED certified? solar panels, gray water systems, all electric appliances, recycling and compost options so easy to do; support for the people who need jobs the most could be hired to help do the building; how to guarantee that the new housing will actually solve problems for no and low-income people; and is there a review of the current empty commercial spaces, to determine how viable those are to remain commercial when COVID is over.

9. Mary Miller

Please increase affordable development in infill areas in Southern Marin. This will reduce noise and air pollution from commuters traveling from Sonoma and Marin to jobs in San Francisco.

10. Peter Newman

The county should make the survey accessible by computer as well as by smart phone -- as some of us older citizens may not be able or willing to access the survey via their phones. I



am technically capable of doing that, but the screen is too small for me to be able to view the survey on my computer.

#### 11. Jon Metcalf

Pointed out specific constraints in the area around McPhail's School in Santa Venetia, including: biological resources and biodiversity; geology and soils and concerns regarding liquefaction and potential instability; hydrology and water quality and higher flood levels year after year; land use and planning and any future plans should reference the Santa Venetia Community Plan; public services and essentially no services near the McPhail's area; transportation and limited public transportation but traffic congestion.

During the comment period, a "virtual" scoping session was held on Tuesday, January 11, 2022 from 6:00 p.m. to 8:00 p.m. The meeting was held via Zoom, and 16 members of the public were able to attend and participate in this scoping session online with 12 County Staff or County consultants participating. The six (6) following community members provided verbal comments or questions on the scope of environmental analysis:

- a) Jack Krystal
- b) Suzanne Sadowsky
- c) Jim Sternberg
- d) Pamela Morris
- e) Susan Stompe
- f) Matthew Estipona

Issues raised in written and verbal comments identified the regulatory framework and requirements State Agencies will apply to review of the project, identified specific issues associated with individual sites, and included the following general comments identifying issues and opportunities to consider:

- a) The effects of sea level rise on the built environment;
- b) Concerns related to septic systems in West Marin (particularly San Geronimo Valley);
- c) Pending changes in the stream conservation ordinance (SCA);
- d) Cumulative impacts associated with development in Marin County and constituent Cities and Towns;
- e) Ensure that housing stock is affordable and accessible;
- f) Opportunities to increase affordable development in infill areas to reduce noise and air quality impacts;
- g) Issues associated with water supply, power supply (electrical), and traffic congestion;
- h) Opportunities to make the new housing carbon neutral and to reuse existing underutilized commercial space;
- i) Opportunities to reduce auto dependency through the Housing and Safety Element Updates;

- j) Increase biodiversity by increasing areas dedicated to plants, especially native plants and diverse habitats;
- k) Ensure housing units are equally distributed throughout the County;
- l) Ensure adequate access and parking requirements; and
- m) Ensure utilities and public services are adequate.

Issue areas identified during workshops presenting the Housing Element Update and the Safety Element Update included:

- a) Ensure environmental justice communities/ underserved communities are safe from hazards
- b) Concern about the increase in the number of people
- c) Increase infrastructure demand (water, waste, power, sewage, parking, schools, hospitals, police, firefighters, etc.) due to increased population from housing is a concern
- d) Consider rezoning (agricultural land), building code amendments, convert commercial buildings, and amending regulation for services (Waste, septic, stream, etc.) as a component of this process
- e) Concern about evacuation route access
- f) Provide accessible and affordable housing for the workforce, seniors, people with disabilities (ADA), and low-income families
- g) Create walkable and bikeable communities
- h) Rezone areas that are historically segregated
- i) What efforts is the County making to update septic policies/regulations
- j) Provide accessible and affordable housing for the workforce, seniors, people with disabilities (ADA), and low-income families

This EIR reaches the following major conclusions:

- Future potential development facilitated by the Project would result in 15 significant unavoidable impacts. This EIR identified mitigation measures for each impact, if mitigation was available. In some instances, the mitigation would not be sufficient to reduce the impact to a less-than-significant level and in other cases it was not definite whether the mitigation would be sufficient due to the uncertainty of future conditions that could exist at the time a development proposal is submitted. Decision-makers will need to make findings of overriding considerations if they determine that the benefits outweigh the significant unavoidable impacts of the project.
- The Project is currently inconsistent with the interrelated MTC/ABAG Plan Bay Area 2050, the CARB 2017 Scoping Plan, and the Marin County 2030 Climate Action Plan (CAP) based on the vehicle miles traveled (VMT) that would result from the State-mandated RHNA for unincorporated Marin County.
- Some potential housing sites proposed by the Project include land designated as Farmland of Local Importance or Grazing Land. Uses not permitted or conditionally permitted by the County Code would require a change in land use designation, which would be a conversion of farmland to non-agricultural use, which would be a significant

impact. However, several adopted CWP policies that protect agricultural uses would ensure that any potential impacts related to the conversion or change in farmland to non-agricultural are addressed through adopted policy.

- Water suppliers in the county experience supply deficits during extended drought periods, and the total number of housing units proposed under the Project would increase demands in some areas of the county that already are experiencing supply deficits.
- Some areas of the county have limited wastewater disposal capacity, in some instances due to limited septic expansion opportunities. Housing units proposed under the Project in those areas would exacerbate constrained systems.

## 2.6 SUMMARY OF IMPACTS AND MITIGATION MEASURES

This Draft EIR considers the future potential development facilitated by the Project and assesses the significant environmental effects of implementing the Project, including its contribution to cumulative impacts in the county. Table 2-3, Summary of Impacts and Recommended Mitigation Measures, which follows, summarizes any **significant** project or cumulative impact and associated mitigation measure or measures identified in this EIR for the 17 environmental topics listed above and discussed in Chapters 4 through 20 of this EIR and listed above. The table is arranged into five columns: (1) impacts, (2) significance without mitigation, (3) mitigation measures, (4) the entity responsible for implementing each mitigation measure, and (5) the level of impact significance after implementation of the mitigation measure(s). The following levels of significance were used to identify impacts in Table 2-3 and elsewhere in this Draft EIR:

- Less-than-Significant Impact (LTS) – A change in the environment that does not exceed specific significance thresholds, or no change at all.
- Significant Impact (S) – An adverse change in the environment, where the change exceeds a specific significance threshold. These thresholds are described under the "Thresholds of Significance" in Chapters 4 through 20.
- Significant Unavoidable Impact (SU) – A significant impact that cannot be avoided with mitigation. These include impacts that could be partly mitigated but could not be reduced to a less-than-significant level.

The topical Chapters list the thresholds of significance for their respective environmental subject.

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<b>AESTHETICS</b>				
<b>Impact 4-1: Effects on Scenic Vistas.</b> [Threshold of Significance (a)]	S	No feasible mitigation is available. This impact would remain <b>significant and unavoidable</b> .	County	SU
<b>Impact 4-2: Impacts on Existing Visual Character and Quality.</b> [Threshold of Significance (c)]	S	No feasible mitigation is available. This impact would remain <b>significant and unavoidable</b> .	County	SU
<b>Impact 4-3: Project Light and Glare Effects.</b> [Threshold of Significance (d)]	LS	NA	NA	NA
<b>AGRICULTURAL AND FORESTRY RESOURCES</b>				
<b>Impact 5-1: Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.</b> [Threshold of Significance (a)]	NI	NA	NA	NA
<b>Impact 5-2: Conflicts With Agricultural Use Zoning or Williamson Act Contracts.</b> [Threshold of Significance (b)]	LS	NA	NA	NA
<b>Impact 5-3: Conflicts With Forest Land or Timberland Zoning.</b> [Threshold of Significance (c)]	NI	NA	NA	NA
<b>Impact 5-4: Loss or Conversion of Forest Land to Non-Forest Use.</b> [Threshold of Significance (d)]	NI	NA	NA	NA
<b>Impact 5-5: Conversion of or Change in Farmland to Non-Agricultural Use.</b> [Threshold of Significance (e)]	LS	NA	NA	NA
<b>AIR QUALITY</b>				

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
<p><b>Impact 6-1: Conflict with the Local Air Quality Plan and Result in a Cumulatively Considerable Net Increase in Criteria Air Pollutants for which the Region is Non-Attainment (Operational).</b> [Thresholds of Significance (a) and (b)]</p>	<p>S</p>	<p><b>Mitigation Measure 6-1: Reduce VMT from New Residential Development.</b> Implement Mitigation Measure 18-4 (Transportation).</p> <p><b>Mitigation Measure 18-4.</b> Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the <i>Technical Advisory on Evaluating Transportation Impacts in CEQA</i>, OPR, 2018 (or subsequent updates), or future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments. For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and</p>	<p>Project applicants; County</p>	<p>SU</p>

- S = Significant
- LS = Less than significant
- SU = Significant unavoidable impact
- NI = No Impact
- NA = Not applicable

See Table 1.1 for definitions.

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
		<p>evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a major role in most cases. Following are TDM and other strategies that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.</p> <ul style="list-style-type: none"> <li>▪ Subsidize resident transit passes</li> <li>▪ Provide or participate in established ride-matching program(s)</li> <li>▪ Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator</li> <li>▪ Complete bus stop improvements or on-site mobility hubs</li> <li>▪ Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit</li> <li>▪ Reduce parking supply at affordable or senior projects and projects that are well-served by transit</li> <li>▪ Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present</li> <li>▪ Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)</li> <li>▪ Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.</li> </ul>		

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		Even with implementation of this mitigation measure, this impact would remain <i>significant and unavoidable</i> .		
<p><b>Impact 6-2: Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Construction).</b> [Threshold of Significance (b)]</p>	S	<p><b>Mitigation Measure 6-2: Evaluate Air Quality Impacts of Proposed Projects and Plans.</b> The County shall require future projects and plans to evaluate and mitigate, as necessary, potential air quality impacts through Countywide Plan Program AIR-1.b. The text of Countywide Plan Program AIR-1.b states:</p> <p>Evaluate Air Quality Impacts of Proposed Projects and Plans. As part of the Environmental Review Process, use the current BAAQMD CEQA Guidelines to evaluate the significance of air quality impacts from projects or plans, and to establish appropriate minimum submittal and mitigation requirements necessary for project or plan approval.</p> <p>Even with implementation of these measures, this impact would remain <i>significant and unavoidable</i>.</p>	Project applicants; County	SU
<p><b>Impact 6-3: Generate Toxic Air Contaminant Emissions that Expose Sensitive Receptors to Substantial Pollutant Concentrations During Construction.</b> [Threshold of Significance (c)]</p>	S	<p><b>Mitigation Measure 6-3: Evaluate Air Quality Impacts of Proposed Projects and Plans.</b> Implement Mitigation Measure 6-2.</p>	Project applicants; County	SU

- S = Significant
- LS = Less than significant
- SU = Significant unavoidable impact
- NI = No Impact
- NA = Not applicable

See Table 1.1 for definitions.

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		<p><b>Mitigation Measure 6-2: Evaluate Air Quality Impacts of Proposed Projects and Plans.</b> The County shall require future projects and plans to evaluate and mitigate, as necessary, potential air quality impacts through Countywide Plan Program AIR-1.b. The text of Countywide Plan Program AIR-1.b states:</p> <p>Evaluate Air Quality Impacts of Proposed Projects and Plans. As part of the Environmental Review Process, use the current BAAQMD CEQA Guidelines to evaluate the significance of air quality impacts from projects or plans, and to establish appropriate minimum submittal and mitigation requirements necessary for project or plan approval.</p> <p>Even with implementation of Mitigation Measure 6-3, this impact would remain <i>significant and unavoidable</i>.</p>		
<p><b>Impact 6-4:</b> Expose Sensitive Receptors to Substantial Operational Pollutant Concentrations. [Threshold of Significance (c)]</p>	LS	NA	NA	NA
<p><b>Impact 6-5: Objectionable Odors.</b> [Threshold of Significance (d)]</p>	LS	NA	NA	NA
<b>BIOLOGICAL RESOURCES</b>				
<p><b>Impact 7-1: Impacts to Special-Status Species.</b> [Threshold of Significance (a)]</p>	S	<p><b>Mitigation Measure 7-1:</b> To Protect Special-Status Species During Implementation of Safety Element Activities, Marin County shall implement the following measures listed below:</p>	County	LS



**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		<ul style="list-style-type: none"> <li>▪ All projects undertaken while carrying out Safety Element implementation programs shall be required to conduct a <i>biological resources site assessment, prepared by a qualified biologist</i>, to determine whether the project will result in significant biological impacts. The assessment shall be submitted to the County for review as part of the discretionary permit approval process. The biological resources site assessment shall include the following:                             <ul style="list-style-type: none"> <li>▪ The presence or absence of any sensitive biological resources that could be affected by proposed activities, including occurrences of special-status species, occurrences of sensitive natural communities, jurisdictional wetlands, and important wildlife nursery areas and movement corridors;</li> <li>▪ Recommendations for protocol-level surveys if necessary to determine presence or absence of special-status animal or plant species, as needed;</li> <li>▪ Impact assessment of the proposed activities on sensitive biological resources;</li> <li>▪ Mitigation measures for avoidance of harm or removal of sensitive biological</li> </ul> </li> </ul>		

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See Table 1.1 for definitions.

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
		<p>resources (e.g., avoidance of sensitive biological periods such as the bird and bat breeding season and bat winter torpor season), and compensation for the loss of sensitive biological resources such that there is no net loss of sensitive habitat acreage, values, and function.</p> <p>The County shall review the results of the biological resources site assessment to determine whether impacts to Special-Status Species are likely to occur and the actions needed to avoid identified impacts, as well as to determine if additional County permits are required, and the appropriate level of CEQA review.</p> <p>With implementation of Mitigation Measure 7-1, impacts of the Safety Element Update to Special-Status Species would be <i>less than significant</i>.</p>		
<p><b>Impact 7-2: Impacts on Riparian Habitat, Sensitive Natural Communities, and Wetlands.</b> [Thresholds of Significance (b) and (c)]</p>	<p>S</p>	<p><b>Mitigation Measure 7-2:</b> Best Management Practices for vegetation management in riparian areas, wetlands, and sensitive natural communities. For fire safety implementation projects (e.g., fuel load reduction) of any size where sensitive biological resources may occur, the County and/or contractors shall prepare a Construction Management Plan (CMP) for projects that involve vegetation removal within or in proximity to riparian areas, wetlands, and sensitive natural communities. The CMP shall include Best Management Practices (BMPS) that protect these habitats. The CMPs may include, but are not limited to, the following BMPs:</p>	<p>Project applicants; County</p>	<p>LS</p>

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		<ul style="list-style-type: none"> <li>▪ Setbacks from riparian areas, wetlands, and other sensitive areas where work should be avoided.</li> <li>▪ Field delineation of sensitive habitats as Environmentally Sensitive Areas to avoid.</li> <li>▪ Identification of sensitive areas where work should be done by hand rather than with heavy machinery</li> <li>▪ Measures to control and prevent the discharge of potential pollutants, including solid wastes, paints, concrete, petroleum products, chemicals, wash water or sediment and non-stormwater discharges to storm drains and water courses.</li> <li>▪ Restrictions on cleaning, fueling, or maintaining vehicles on site, except in a designated area in which run-off is contained and treated.</li> <li>▪ Erosion control measures for wet season work (October 15 through April 15).</li> <li>▪ Measures to store, handle, and dispose of construction materials and wastes properly, so as to prevent their contact with stormwater.</li> <li>▪ Measures to avoid the invasion and/or spread of noxious weeds.</li> </ul>		

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Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		Implementation of this mitigation measure would reduce impacts of the Safety Element Update on riparian habitat, state or federally-protected wetlands, or other sensitive natural communities to a <i>less-than-significant level</i> .		
<p><b>Impact 7-3: Impacts on Wildlife Movement Corridors and Wildlife Nursery Sites.</b> [Threshold of Significance (d)] .</p>	S	<p><b>Mitigation Measure 7-3.1. Revise Definition of the Nesting Season</b></p> <p>Adopted Policy BIO-2.5 in the Natural Systems and Agriculture Element of the 2007 CWP defines the avian nesting season as March 1 through August 1. However, the nesting season in Marin County is generally defined as February 1 through August 31. Unless this policy is amended, future individual development projects resulting from the Housing Element Update have the potential to take active nests of birds protected by the Migratory Bird Treaty Act and California Fish and Game Code. Therefore, the County shall revise this policy as follows:</p> <p><b>Policy BIO-2.5 (revised)</b> Restrict Disturbance in Sensitive Habitat During the Nesting Season. Limit construction and other sources of potential disturbance in sensitive riparian corridors, wetlands, and Baylands to protect bird nesting activities. Disturbance should generally be set back from sensitive habitat during the nesting season from <u>February 1 through August 31</u> to protect bird nesting, rearing, and fledging activities. Preconstruction surveys should be conducted by a qualified professional where development is proposed in sensitive habitat areas during the nesting</p>	County	LS

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		<p>season, and appropriate restrictions should be defined to protect nests in active use and ensure that any young have fledged before construction proceeds.</p> <p><b>Mitigation Measure 7-3.2 Bird-Safe Design.</b> The County shall establish design standards for new construction and redevelopment projects to implement bird-safe features to prevent or reduce avian collision risks with glass windows. Consistent with the American Bird Conservancy recommendations, the County shall specify thresholds when standards would apply, such as site location relative to avian habitat and amount of contiguous glass proposed on building facades. If projects meet or exceed the thresholds, the County shall require application of bird-safe design features including, but not limited to, window treatments, glass treatments, and landscaping and lighting modifications. The County or project applicants shall obtain a qualified biologist, with experience in avian ecology, to evaluate proposed building plans and bird-safe design features, where applicable. If the proposed bird-safe design does not sufficiently address collision risks, the biologist shall provide additional bird-safe design recommendations that shall be incorporated.</p>		

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Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		<p><b>Mitigation Measure 7-3.3. Implement Protective Buffers During Vegetation Management.</b></p> <p>To protect wildlife movement corridors and wildlife nursery sites from removal, degradation, or substantial long-term disturbance, the County shall minimize vegetation management activities to the greatest extent feasible and implement protective buffers, or specify vegetation management and removal methods to protect wildlife movement corridors and avoid disturbance of wildlife nursery sites.</p> <p>With implementation of Mitigation Measures 7-3.1, 7-3.2, and 7-3.3, impacts of the Housing and Safety Element Update would be <i>less than significant</i>.</p>		
<p><b>Impact 7-4: Conflicts with Local Policies or Ordinances Protecting Biological Resources. [Threshold of Significance (e)]</b></p>	NI	NA	NA	NA
<p><b>Impact 7-5: Conflicts with adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other conservation plans. [Threshold of Significance (f)]</b></p>	NI	NA	NA	NA
<p><b>CULTURAL, TRIBAL CULTURAL, AND HISTORIC RESOURCES</b></p>				
<p><b>Impact 8-1: Destruction/Degradation of Historical Resources. [Threshold of Significance (a)] .</b></p>	S	<p><b>Mitigation Measure 8-1.</b> For any project facilitated by the Housing and Safety Elements Update project that the County determines may involve a property that contains a potentially significant historical resource, then that resource shall be assessed by a professional who meets the Secretary of the Interior's Professional Qualifications Standards to determine whether the</p>	Project applicants; County	LS/SU

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
		<p>property is a significant historic resource and whether or not the project may have a potentially significant adverse effect on the historical resource. If, based on the recommendation of the qualified professional, the County determines that the project may have a potentially significant effect, the County shall require the applicant to implement the following mitigation measures:</p> <p>(a) Adhere to at least one of the following Secretary of the Interior’s Standards:<sup>1</sup></p> <p><i>Secretary of Interior’s Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings; or Secretary of Interior’s Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.</i></p> <p>The qualified professional shall make a recommendation to the County as to whether the</p>		

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<sup>1</sup>Under the CEQA Guidelines (section 15064.5[b][3]), a project’s adverse impact on a historic resource generally can be mitigated to a less-than-significant level by following either of these standards.

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Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
		<p>project fully adheres to the Secretary of the Interior’s Standards, and any specific modifications necessary to do so. The final determination as to a project’s adherence to the Standards shall be made by the County body with final decision-making authority over the project. Such a determination of individual project adherence to the Secretary of the Interior’s Standards will constitute mitigation of the project historic resource impacts to a <i>less-than-significant level</i> (CEQA Guidelines section 15064.5).</p> <p>(b) If measure (a) is not feasible, the historical resource shall be moved to a new location compatible with the original character and use of the historical resource, and its historical features and compatibility in orientation, setting, and general environment shall be retained, such that a substantial adverse change in the significance of the historical resource is avoided. Implementation of measure (b) would reduce the impact to a <i>less-than-significant level</i>.</p> <p>If neither measure (a) nor measure (b) is feasible, then the County shall, as applicable and to the extent feasible, implement the following measures in the following order:</p> <p>(c) Document the historical resource before any changes that would cause a loss of integrity and loss of continued eligibility. The documentation shall adhere to the Secretary of the Interior’s <i>Standards for Architectural and Engineering Documentation</i>. The level of documentation shall</p>		



**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		<p>be proportionate with the level of significance of the resource. The documentation shall be made available for inclusion in the Historic American Building Survey (HABS) or the Historic American Engineering Record (HAER) Collections in the Library of Congress, the California Historical Resources Information System (CHRIS), and the Bancroft Library, as well as local libraries and historical societies.</p> <p>(b) If measure (a) is not feasible, the historical resource shall be moved to a new location compatible with the original character and use of the historical resource, and its historical features and compatibility in orientation, setting, and general environment shall be retained, such that a substantial adverse change in the significance of the historical resource is avoided.</p> <p>Implementation of measure (b) would reduce the impact to a <i>less-than-significant level</i>.</p> <p>If neither measure (a) nor measure (b) is feasible, then the County shall, as applicable and to the extent feasible, implement the following measures in the following order:</p>		

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**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
		<p>(c) Document the historical resource before any changes that would cause a loss of integrity and loss of continued eligibility. The documentation shall adhere to the Secretary of the Interior's <i>Standards for Architectural and Engineering Documentation</i>. The level of documentation shall be proportionate with the level of significance of the resource. The documentation shall be made available for inclusion in the Historic American Building Survey (HABS) or the Historic American Engineering Record (HAER) Collections in the Library of Congress, the California Historical Resources Information System (CHRIS), and the Bancroft Library, as well as local libraries and historical societies.</p> <p>(d) Retain and reuse the historical resource to the maximum feasible extent and continue to apply the Secretary of the Interior's Standards to the maximum feasible extent in all alterations, additions, and new construction.</p> <p>(e) Through careful methods of planned deconstruction to avoid damage and loss, salvage character-defining features and materials for educational and interpretive use on-site, or for reuse in new construction on the site in a way that commemorates their original use and significance.</p> <p>(f) Interpret the historical significance of the resource through a permanent exhibit or program in a publicly accessible location on the site or elsewhere within the Planning Area.</p>		

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		Implementation of measures (c), (d), (e), and/or (f) would reduce a significant impact on historic resources, but not to a less-than-significant level. Without knowing the characteristics of the potentially affected historical resource or of the future individual development proposal, the County cannot determine with certainty that measure (a) or (b) above would be considered feasible. Consequently, this impact is currently considered <i>significant and unavoidable</i> .		
<b>Impact 8-2: Potential for Disturbance of Archaeological Resources, Including Human Remains, and Tribal Cultural Resources.</b> [Thresholds of Significance (b), (c), (d)(1), and (d)(2)]	LS	NA	NA	NA
<b>GEOLOGY AND SOILS</b>				
<b>Impact 9-1: Effects of Rupture of a Known Earthquake Fault.</b> [Threshold of Significance (a)(i)]	LS	NA	NA	NA
<b>Impact 9-2: Effects of Strong Seismic Ground Shaking.</b> [Threshold of Significance (a)(ii)]	LS	NA	NA	NA
<b>Impact 9-3: Potential Soil Erosion and Loss of Topsoil.</b> [Threshold of Significance (b)]	LS	NA	NA	NA

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Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<b>Impact 9-4: Potential Ground Instability Impacts.</b> [Thresholds of Significance (a)(iii), (a)(iv), (c), (d)]	LS	NA	NA	NA
<b>Impact 9-5: Potential Impacts Related to Soil Incompatibility for Use of Septic Tank or Alternative Wastewater Disposal Systems.</b> [Threshold of Significance (e)]	LS	NA	NA	NA
<b>Impact 9-6: Potential for Disturbance of Paleontological Resources.</b> [Threshold of Significance (f)]	LS	NA	NA	NA
<b>GREENHOUSE GAS EMISSIONS AND ENERGY</b>				
<b>Impact 10-1: Generate Significant Greenhouse Gas Emissions and Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purposes of Reducing Greenhouse Gas Emissions.</b> [Thresholds of Significance (a) and (b)] The residential housing growth that would be facilitated by the proposed Project would generate GHG emissions in significant quantities and would be inconsistent with the CARB 2017 Scoping Plan, MTC/ABAG Plan Bay Area 2050, and County 2030 CAP. This would be a <i>potentially significant impact</i> .	S	<b>Mitigation Measure 10-1A: Prohibit Natural Gas Plumbing and Appliances in New Housing Sites.</b> The County’s 2022 Green Building Model Reach Code that is under development shall include provision(s) that prohibit natural gas plumbing and the use of natural gas appliances such as cook tops, water heaters, and space heaters in all new housing site developments unless the applicant can show an all-electric building design is not feasible due to specific economic, technical, logistical, or other factors associated with the development site. All new housing sites shall be required to comply with the aforementioned natural gas prohibition requirements prior to the adoption of the County’s 2022 Green Building Model Reach Code.	Project applicants; County	SU
		<b>Mitigation Measure 10-1B: Residential Bicycle Parking Requirements.</b> The County shall require new residential housing sites to comply with the Tier II bicycle parking requirements contained in	Project applicants; County	SU

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
		the latest editions of the California Green Building Standards Code (CalGreen) in effect at the time the building permit application is submitted to the County. Currently, the 2019 CalGreen Code Section A4.106.9, Bicycle Parking, requires new multi-family buildings provide on-site bicycle parking for at least one bicycle per every two dwelling units, with acceptable parking facilities conveniently reached from the street.		
		<p><b>Mitigation Measure 10-1C: Reduce VMT from New Residential Development.</b> Implement Mitigation Measure 18-4 (Transportation).</p> <p><b>Mitigation Measure 18-4.</b> Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the <i>Technical Advisory on Evaluating Transportation Impacts in CEQA</i>, OPR, 2018 (or subsequent updates), or future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM</p>	Project applicants; County	SU

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**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
		<p>travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments. For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a major role in most cases. Following are TDM and other strategies that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.</p> <ul style="list-style-type: none"> <li>▪ Subsidize resident transit passes</li> <li>▪ Provide or participate in established ride-matching program(s)</li> <li>▪ Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator</li> <li>▪ Complete bus stop improvements or on-site mobility hubs</li> <li>▪ Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit</li> <li>▪ Subsidize resident transit passes</li> </ul>		

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		<ul style="list-style-type: none"> <li>▪ Provide or participate in established ride-matching program(s)</li> <li>▪ Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator</li> <li>▪ Complete bus stop improvements or on-site mobility hubs</li> <li>▪ Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit</li> <li>▪ Reduce parking supply at affordable or senior projects and projects that are well-served by transit</li> <li>▪ Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present</li> <li>▪ Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)</li> <li>▪ Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.</li> </ul> <p>Even with implementation of these mitigation measure, this impact would remain <i>significant and unavoidable</i>.</p>		

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Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<b>Impact 10-2: Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources.</b> [Threshold of Significance (c)]	LS	NA	NA	NA
<b>Impact 10-3: Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency.</b> [Threshold of Significance (d)]	LS	NA	NA	NA
<b>HAZARDS AND HAZARDOUS MATERIALS</b>				
<b>Impact 11-1: Project-Related Potential Impacts Due to Hazardous Materials Transport, Use, Storage, or Disposal.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 11-2: Significant Hazards Due to Reasonably Foreseeable Upset and Accident Conditions Involving Release of Hazardous Materials into the Environment.</b> [Threshold of Significance (b)]	LS	NA	NA	NA
<b>Impact 11-3: Project-Related Potential Asbestos and PCB Exposure.</b> [Threshold of Significance (b)]	LS	NA	NA	NA
<b>Impact 11-4: Project-Related Potential Lead-Based Paint Exposure.</b> [Threshold of Significance (b)]	LS	NA	NA	NA
<b>Impact 11-5: Potential for Hazardous Materials Near Schools.</b> [Threshold of Significance (c)]	LS	NA	NA	NA
<b>Impact 11-6: Protocols for Government Code Section 65962.5 Sites.</b> [Threshold of Significance (d)]	LS	NA	NA	NA



**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<b>Impact 11-7: Potential Airport Hazards.</b> [Threshold of Significance (e)]	LS	NA	NA	NA
<b>Impact 11-8: Impacts Related to Adopted Emergency Response Plans or Emergency Evacuation Plans.</b> [Threshold of Significance (f)]	LS	NA	NA	NA
<b>HYDROLOGY AND WATER QUALITY</b>				
<b>Impact 12-1: Water Quality Impacts.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 12-2 Groundwater Recharge and Groundwater Management Impacts.</b> [Threshold of Significance (b)]	LS	NA	NA	NA
<b>Impact 12-3: Stormwater Runoff and Drainage Impacts.</b> [Threshold of Significance (c)]	LS	NA	NA	NA
<b>Impact 12-4: Risks from Pollutant Release due to Project Inundation.</b> [Threshold of Significance (d)]	LS	NA	NA	NA
<b>Impact 12-5: Conflicts with Water Quality Control or Sustainable Groundwater Management Plans.</b> [Threshold of Significance (e)]	LS	NA	NA	NA
<b>LAND USE AND PLANNING</b>				

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<b>Impact 13-1: Project Potential for Physically Dividing an Established Community.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 13-2: Project Consistency with Land Use Plans, Policies, and Regulations Adopted for the Purpose of Avoiding or Mitigating Environmental Effects.</b> [Threshold of Significance (b)]	LS	NA	NA	NA
<b>MINERAL RESOURCES</b>				
<b>Impact 14-1: Loss of Availability of Known Mineral Resources of Value to Regional and State Residents.</b> [Threshold of Significance (a)]	NI	NA	NA	NA
<b>Impact 14-2: Loss of Availability of a Locally Important Mineral Resource Recovery Site Delineated on a Local General Plan, Specific Plan, or Other Land Use Plan.</b> [Threshold of Significance (b)]	NI	NA	NA	NA
<b>NOISE</b>				
<b>Impact 15-1: Substantial Permanent Increases in Traffic Noise Levels.</b> [Threshold of Significance (a)] The implementation of the proposed Project could result in a substantial permanent increase in noise levels. This would be a <i>potentially significant impact</i> .	S	<p><b>Mitigation Measure 15-1.</b> Reduce VMT from New Residential Development. Implement Mitigation Measure 18-4 (Transportation).</p> <p><b>Mitigation Measure 18-4.</b> Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the <i>Technical Advisory on Evaluating Transportation Impacts in CEQA</i>,</p>	Project applicants; County	SU

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
		<p>OPR, 2018 (or subsequent updates), or future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments. For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a major role in most cases. Following are TDM and other strategies that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.</p> <ul style="list-style-type: none"> <li>▪ Subsidize resident transit passes</li> <li>▪ Provide or participate in established ride-matching program(s)</li> </ul>		

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Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		<ul style="list-style-type: none"> <li>▪ Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator</li> <li>▪ Complete bus stop improvements or on-site mobility hubs</li> <li>▪ Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit</li> <li>▪ Reduce parking supply at affordable or senior projects and projects that are well-served by transit</li> <li>▪ Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present</li> <li>▪ Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)</li> <li>▪ Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.</li> </ul> <p>Even with implementation of this mitigation measure, this impact would remain <b>significant and unavoidable</b>.</p>		
<b>Impact 15-2: Permanent Increases in Stationary and Other On-site Noise Levels.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 15-3: Temporary Construction Noise Levels.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 15-4: Generation of Groundborne Vibration and Noise.</b> [Threshold of Significance (b)]	LS	NA	NA	NA

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<b>Impact 15-5: Exposure to Airport-related Noise Levels.</b> [Threshold of Significance (c)]	LS	NA	NA	NA
<b>POPULATION AND HOUSING</b>				
<b>Impact 16-1: Project Inducement of Substantial Unplanned Population Growth.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 16-2: Temporary Employment Impacts.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 16-3: Population and Housing Displacement Effects.</b> [Threshold of Significance (b)]	LS	NA	NA	NA
<b>PUBLIC SERVICES</b>				
<b>Impact 17-1: Increase in Fire Protection/Emergency Medical Service (EMS) Demands.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 17-2: Increase in Police Service Demands.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 17-3: Impacts on Public Schools.</b> [Threshold of Significance (a)]	LS	NA	NA	NA

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- NI = No Impact
- NA = Not applicable

See Table 1.1 for definitions.

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<b>Impact 17-4: Impacts on Parks and Recreational Facilities.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 17-5: Impacts on Other Public Facilities.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 17-6: Increase the use of existing neighborhood and regional parks.</b> [Threshold of Significance (b) and [Threshold of Significance (c)]]	LS	NA	NA	NA
<b>Construction Period Impacts</b>	LS	NA	NA	NA
<b>TRANSPORTATION</b>				
<b>Impact 18-1: Conflict with Adopted Policies, Plans, or Programs Regarding Roadways.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 18-2: Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 18-3: Conflict with Adopted Policies, Plans, or Programs Regarding Bicycle and Pedestrian Facilities.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 18-4: Impacts Related to Vehicle Miles Traveled.</b> [Threshold of Significance (b)] The Planning Area used in the VMT analysis consists of all MAZs within the TAMDM model that contain one or more candidate housing sites identified for the Housing and Safety Elements Update. The VMT modeling results produced by TAMDM indicate that with the additional housing units, residential uses in the Planning	S	<b>Mitigation Measure 18-4.</b> Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the <i>Technical Advisory on Evaluating Transportation Impacts in CEQA</i> , OPR, 2018 (or subsequent updates), or	Project applicants; County	SU

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<p>Area would on average generate 19.7 VMT per capita, exceeding the applied 10.7 VMT per capita threshold of significance by approximately 84 percent. This would be a <i>significant impact</i>.</p>		<p>future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments.</p> <p>For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a major role in most cases. Following are TDM and other strategies that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.</p> <ul style="list-style-type: none"> <li>▪ Subsidize resident transit passes</li> <li>▪ Provide or participate in established ride-matching program(s)</li> </ul>		

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- NA = Not applicable

See Table 1.1 for definitions.

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
		<ul style="list-style-type: none"> <li>▪ Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator</li> <li>▪ Complete bus stop improvements or on-site mobility hubs</li> <li>▪ Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit</li> <li>▪ Reduce parking supply at affordable or senior projects and projects that are well-served by transit</li> <li>▪ Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present</li> <li>▪ Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)</li> <li>▪ Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.</li> </ul> <p>This mitigation measure would reduce the VMT impacts associated with future residential development projects.</p> <p>However, given the inability to assure that residential VMT per capita can be reduced below significance thresholds despite required VMT reduction strategies, this impact would be <i>significant and unavoidable</i>.</p>		
<p><b>Impact 18-5: Hazards Due to Design Features or Incompatible Uses.</b> [Threshold of Significance (c)]</p>	<p>LS</p>	<p>NA</p>	<p>NA</p>	<p>NA</p>



**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

Impacts	Significance Without Mitigation	Mitigation Measures	Mitigation Responsibility	Significance With Mitigation
<b>UTILITIES AND SERVICE SYSTEMS</b>				
<b>Impact 19-1a: Project and Cumulative Need for Water System Infrastructure: West Marin Community Service Districts and North Marin Water District - West Marin.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 19-1b: Project and Cumulative Need for Water System Infrastructure: Marin Municipal Water District and North Marin Water District – Novato Service Area.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 19-1c: Project and Cumulative Need for Water System Infrastructure: Individual Water Supply Systems.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 19-1d: Project and Cumulative Need for Wastewater System Infrastructure: West Marin Community Service Districts.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 19-1e: Project and Cumulative Need for Wastewater System Infrastructure: Sanitary Districts.</b> [Threshold of Significance (a)]	LS	NA	NA	NA

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- NA = Not applicable

See Table 1.1 for definitions.

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<b>Impact 19-1f: Project and Cumulative Need for Wastewater System Infrastructure: Individual Septic Systems.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 19-1g: Project and Cumulative Need for Storm Water Drainage Infrastructure.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 19-1h: Construction Period Impacts—Water System, Wastewater System, and Storm Water Drainage Infrastructure</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 19-2a: Project and Cumulative Water Supply Impacts: West Marin Community Service Districts and North Marin Water District - West Marin.</b> [Threshold of Significance (b)] Parts of the unincorporated County are served by community service districts and water districts whose supplies are dependent upon water obtained from local wells and streams. Under drought conditions, water in the wells and streams has decreased to levels such that the districts have imposed restrictions for existing customers and moratoriums on new connections. Multiple new connections can result in demands in excess of available supply. Bolinas Community Public Utility District and Inverness Public Utility District do not have sufficient water supplies available to serve the Project or cumulative (Project and Districts’ commitments outside of the Project) scenarios during normal, dry and multiple dry years. This represents a <i>potentially significant impact</i> .	S	No feasible mitigation is available. This impact would remain <i>significant and unavoidable</i> .	County; West Marin Community Service Districts; North Marin Water District - West Marin	SU

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<p><b>Impact 19-2b: Project and Cumulative Water Supply Impacts: North Marin Water District and Marin Municipal Water District.</b>                      [Threshold of Significance (b)] Parts of the unincorporated County are served by North Marin Water District (NMWD), the majority of whose supplies are dependent upon water purchased from Sonoma County Water Agency and piped into the County. Other parts of the unincorporated County are served by Marin Municipal Water District (MMWD), the majority of whose supplies are dependent upon water stored in Marin County reservoirs. When these Districts have access to full annual water entitlements and full reservoir capacity, they are able to accommodate population growth as indicated in their “2020 Urban Water Management Plan for North Marin Water District” and “MMWD Water Resources Plan 2040.”</p> <p>However, due to drought impacts in Sonoma County, NMWD is not able to receive its full annual entitlement from Sonoma County Water Agency and has adopted an ordinance imposing moratoriums on new connections in order to work within its restricted supply. Additionally, until recently MMWD had imposed restrictions on</p>	<p>S</p>	<p>No feasible mitigation is available. This impact would remain <i>significant and unavoidable</i>.</p>	<p>Project applicants; County; NMWD; MMWD</p>	<p>SU</p>

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See Table 1.1 for definitions.

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<p>connections for irrigation for new development due to water shortages in its reservoirs as a result of multiple years of less than average rainfall. MMWD’s restriction on irrigation connections was lifted in 2022 because large storm events in the winter of 2021-2022 filled the reservoirs. Because there is uncertainty in the future about the amount of water that would be available for the Districts to supply to customers during the current, ongoing drought, and the Districts are in the early stages of seeking alternate water sources, possible multiple new connections proposed in the Project and cumulative (Project and Districts’ commitments outside of the Project) scenarios could result in demands in excess of available supply during dry and multiple dry years, which would be a <i>potentially significant impact</i>.</p>				
<p><b>Impact 19-2c: Project and Cumulative Water Supply Impacts: Individual Water Supply Systems.</b> [Threshold of Significance (b)] Parts of the unincorporated County are outside of community service and water district service areas, and developed parcels need to rely on private, individual water supply systems with water obtained from wells and local streams. The Project includes sites which will need to rely on individual water systems. State and local requirements for small water systems will help ensure that the number of units in a development do not exceed the capacity of new or existing wells to supply water. System capacity will be based on the water supply</p>	S	No feasible mitigation is available. This impact would remain <i>significant and unavoidable</i> .	County; project applicants	SU

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<p>investigations required for individual developments at the time they are proposed. Under drought conditions, groundwater can decrease to levels below the supply needed to sustain development. This could result in demands in excess of available supply during normal, dry, and multiple dry years, which would be a <i>potentially significant impact</i>.</p>				
<p><b>Impact 19-3a: Wastewater Treatment Capacity Impacts: Community Service Districts Providing Sewage Treatment.</b> [Threshold of Significance (c)] Parts of the unincorporated County are served by small community service districts that are in need of infrastructure upgrades and expansion in order to collect and treat wastewater from new development.</p> <p>Possible multiple new connections discharging an increased amount of waste to existing infrastructure and facilities could exceed the system’s capacity for conveyance and treatment, which would be a <i>potentially significant impact</i>.</p>	S	No feasible mitigation is available. This impact would remain <i>significant and unavoidable</i> .	County; community service districts	SU
<p><b>Impact 19-3b: Wastewater Treatment Capacity Impacts: Sanitary Districts.</b> [Threshold of Significance (c)] Parts of the unincorporated County are served by large sewer</p>	S	No feasible mitigation is available. This impact would remain <i>significant and unavoidable</i> .	County; project applicants; sewer districts	SU

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See Table 1.1 for definitions.

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<p>districts, some for which future treatment capacity is unknown and which may need infrastructure upgrades and expansion in order to collect and treat wastewater from the Project. Possible multiple new connections discharging an increased amount of wastewater to existing infrastructure and facilities could exceed the system's capacity for conveyance and treatment, which would be a <i>potentially significant impact</i>.</p>				
<p><b>Impact 19-3c: Wastewater Treatment Capacity Impacts Outside of Sanitary Districts and Community Service Districts Providing Sewage Treatment.</b> [Threshold of Significance (c)] Parts of the unincorporated County are outside of sanitary district service areas and community service districts providing wastewater treatment. These areas rely on individual septic systems to treat wastewater on developed parcels. The potential for an individual septic system to have capacity to serve a development's demand depends on the specific soil conditions and existence of natural and built features within the parcel proposed for development. Until site-specific investigations are completed, uncertainty exists on any given parcel regarding the capacity of the existing soil to treat wastewater from a proposed development. Due to this uncertainty in the ability of the parcel to serve a development's wastewater treatment needs, this would be a <i>potentially significant impact</i>.</p>	S	No feasible mitigation is available. This impact would remain <i>significant and unavoidable</i> .	County; project applicants	SU
<p><b>Impact 19-4: Solid Waste Generation Impacts and Compliance with Solid Waste Statutes and</b></p>	LS	NA	NA	NA

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<b>Regulations.</b> [Thresholds of Significance (d) and (e)]				
<b>Impact 19-5: Electricity, Natural Gas, and Telecommunications Infrastructure Impacts.</b> [Threshold of Significance (d)]	LS	NA	NA	NA
<b>Impact 19-6: Construction Period Impacts– Electricity, Natural Gas, and Telecommunications Infrastructure</b> [Threshold of Significance (d)]	LS	NA	NA	NA
<b>WILDFIRE</b>				
<b>Impact 20-1: Emergency Response and/or Emergency Evacuation Plan Impacts.</b> [Threshold of Significance (a)]	LS	NA	NA	NA
<b>Impact 20-2: Wildfire-Related Pollutant Concentration Exposure Impacts.</b> [Threshold of Significance (b)]	LS	NA	NA	NA
<b>Impact 20-3: Impact from Needed Infrastructure Improvements.</b> [Threshold of Significance (c)]	LS	NA	NA	NA
<b>Impact 20-4: Potential Post-Fire Impacts.</b> [Threshold of Significance (d)]	LS	NA	NA	NA

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See Table 1.1 for definitions.

**Table 2-2:  
Summary of Impacts and Recommended Mitigation Measures**

<b>Impacts</b>	<b>Significance Without Mitigation</b>	<b>Mitigation Measures</b>	<b>Mitigation Responsibility</b>	<b>Significance With Mitigation</b>
<b>Impact 20-5: Risk to People and/or Structures from Exposure to Wildfire.</b> [Threshold of Significance (e)]	LS	NA	NA	NA



## **2.7 MITIGATION MONITORING AND REPORTING PROGRAM**

In conformance with California Public Resources Code Section 21081.6, a Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Project, in the event the Project or an alternative is approved. The purpose of the MMRP is to ensure compliance with and assess the effectiveness of mitigation measures incorporated into the Project and set forth in the EIR. Pursuant to State CEQA Guidelines Section 15091, adoption of an MMRP will be necessary before the Project can be adopted by the Marin County Board of Supervisors. Chapter 23 (Mitigation Monitoring and Reporting Program) of this EIR provides a draft of the MMRP.

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### 3. PROJECT DESCRIPTION

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Consistent with State CEQA Guidelines Section 15124, this project description provides sufficient detail to identify and evaluate environmental impacts. In accordance with Section 15124, this Chapter describes: (1) the location and boundaries of the "planning area," which is generally comprised of the unincorporated areas in the county affected by the updated Housing and Safety elements; (2) the background leading up to the proposed Housing and Safety Element Update project; (3) the statement of objectives of the project; (4) the components of and proposed actions associated with the updates (i.e., programs and policies necessary to achieve the goals of the updated elements), which are addressed throughout the EIR; (5) the development capacity assumptions used to evaluate environmental impacts; (6) amendments to the Marin County Development Code, which is Title 22 of the Marin County Code and hereafter referred to as the Development Code, to implement new housing programs and Safety Element requirements; and (7) the intended uses of this EIR and any jurisdictional approvals required to implement the Update project.

To avoid undue repetition, this EIR does not duplicate the detailed contents of the Housing Element and Safety Element documents; rather, the full text of all new or revised policies and programs included in the proposed Project is provided in Appendix B of this EIR. In addition, as with the "Proposed Policies and Actions to Avoid or Reduce Significant Impacts" section of each of the EIR environmental topic chapters (e.g., Public Services, Transportation, Utilities and Service Systems), the reader is encouraged to review the Housing Element and Safety Element for more detail. Copies of the Housing Element and Safety Element are available for viewing at County offices at: **Marin County Community Development Agency, 3501 Civic Center Drive, Room 308, San Rafael, CA 94903**. These Elements and other information about the County's Housing and Safety Elements update process are also available online at the following web address:

<https://www.marincounty.org/depts/cd/divisions/planning/housing-and-safety-elements>

<https://housingelementsmarin.org/marin-county-environmental-review>

#### 3.1 PROJECT LOCATION AND ENVIRONMENTAL SETTING

##### 3.1.1 Overview

The Housing and Safety Elements Update project encompasses the unincorporated territory of Marin County, located in the northwestern part of the San Francisco Bay Area, also known as the North Bay. Marin County's total land and water area is approximately 606 square miles, of which about 87 percent (527 square miles) is unincorporated. According to the 2020 Census, the County has a population of 261,776 - 192,701 in the incorporated cities and towns, and

69,075 in the remainder of unincorporated county territory.<sup>1</sup> Marin County is one of nine counties that comprise the San Francisco Bay Area. It is linked to San Francisco by the Golden Gate Bridge and to the East Bay by the Richmond-San Rafael Bridge. Sonoma County is to the north and east, with San Francisco Bay to the southeast and the Pacific Ocean to the west.

As shown in Figure 3-1 (Regional Context) and Figure 3-2 (County Planning Area), U.S. 101 is the major highway running north/south through the County. State Route (SR) 1 runs north/south along the western part of the County, accessing Sonoma County to the north. Southbound, U.S. 101 and SR 1 merge just north of Marin City before continuing to San Francisco via the Golden Gate Bridge. Interstate 580 (I-580) accesses Contra Costa County to the east via the Richmond-San Rafael Bridge. In addition, further northeast, SR 37 accesses Sonoma County.

Most of Marin County's population resides in the eastern portion of the County in an area of urban development along the U.S. 101 corridor. The western part of the County, generally in and around Point Reyes Station, has a local tourism focus centered around agriculture and abundant parklands and recreation areas. The northwestern part of the county is sparsely populated, and agricultural rangeland is the dominant land use. Land ownership in the county includes federal, state, local (County), and private property owners. Approximately 85 percent of the land area in Marin County is protected from development through open space purchases and conservation easements; federal, State, County, and local parkland; watershed lands; and agricultural zoning.<sup>2</sup>

### 3.1.2 Environmental Corridors

The Countywide Plan designates four environmental corridors, as shown in Figure 3-3 (Environmental Corridors): Coastal, Inland Rural, City-Centered, and Baylands, which are areas with specific geographical and environmental characteristics and natural boundaries formed by north/south running ridges.<sup>3</sup> The Coastal Corridor is adjacent to the Pacific Ocean and primarily designated for federal parklands, recreational uses, agriculture, and the preservation of existing small coastal communities. The Inland Rural Corridor is in the central and northwestern part of the county and primarily designated for agriculture and compatible uses, and for preservation of existing small communities. The City-Centered Corridor is adjacent to Highway 101 in the eastern part of the county, near San Francisco and San Pablo bays, and primarily designated for urban development and for protection of environmental resources. The Baylands Corridor is east of the City-Centered Corridor and encompasses lands along the shoreline of San Francisco, San Pablo, and Richardson bays. The area contains marshes, tidelands, and diked lands that were once wetlands or part of the bays, along with adjacent, largely undeveloped

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<sup>1</sup>County of Marin Community Development Agency, Marin Countywide Update Draft EIR, January 2007, p. 3.0-2; U.S. Census Bureau, Population Division, Annual Estimates of the Resident Population for Counties in California: April 1, 2020 to July 1, 2021, release date March 2022, <https://www.census.gov/data/datasets/time-series/demo/popest/2020s-counties-total.html> and Annual Estimates of the Resident Population for Incorporated Places in California: April 1, 2020 to July 1, 2021 (SUB-IP-EST2021-POP-06), release date May 2022, <https://www.census.gov/data/datasets/time-series/demo/popest/2020s-total-cities-and-towns.html>, both accessed 6/19/22.

<sup>2</sup>Marin County Community Wildfire Protection Plan, December 2020, pp. 11 and 22.

<sup>3</sup>Marin Countywide Plan, November 6, 2007, p. 1.1-2.

# COUNTY OF MARIN

## Legend

 County Boundary



THIS MAP WAS DEVELOPED FOR GENERAL PLAN PURPOSES. THE COUNTY OF MARIN IS NOT RESPONSIBLE OR LIABLE FOR USE OF THIS MAP BEYOND ITS INTENDED PURPOSE.

### Figure 3-1 Regional Context



**Figure 3-2 County Planning Area**

Marin County Housing and Safety Elements Environmental Impact Report



SOURCE: County of Marin

0 1 2 4 6 8 Miles

THIS MAP WAS DEVELOPED FOR GENERAL PLAN PURPOSES. THE COUNTY OF MARIN IS NOT RESPONSIBLE OR LIABLE FOR USE OF THIS MAP BEYOND ITS INTENDED PURPOSE.

Date: January 27, 2009

File: EnvCorr with Bayland 1-2.mxd

# Figure 3-3 Environmental Corridors

Marin County Housing and Safety Elements Environmental Impact Report

uplands.<sup>4</sup> These areas have similar land characteristics and uses, but Countywide Plan policies are unique to each corridor.

The Coastal Corridor is adjacent to the Pacific Ocean and primarily designated for federal parklands, other recreational uses, agriculture, and the preservation of existing small coastal communities. The Inland Rural Corridor is in the central and northwestern part of the County and primarily designated for agriculture and compatible uses, as well as small residential communities.

Along U.S. 101 in the eastern part of the County is the City-Centered Corridor, primarily designated for urban development and protection of environmental resources. East of the City-Centered Corridor is the Baylands Corridor, primarily designated for recognition and protection of its unique environmental features. This corridor contains shorelines along San Francisco, San Pablo, and Richardson bays, with marshes, tidelands, and diked lands that were once either wetlands, part of the bays, and/or largely undeveloped uplands adjacent to the bays.

### 3.1.3 Planning Areas

As discussed in the Countywide Plan,<sup>5</sup> there are seven planning areas designated in Marin County, with six of them in the City-Centered and Baylands corridors generally representing watersheds draining to the bay. The seventh planning area (the West Marin Planning Area) covers both the Coastal and Inland Rural corridors of West Marin. Referring to Figure 3-4 (Planning Areas), the seven planning areas are:

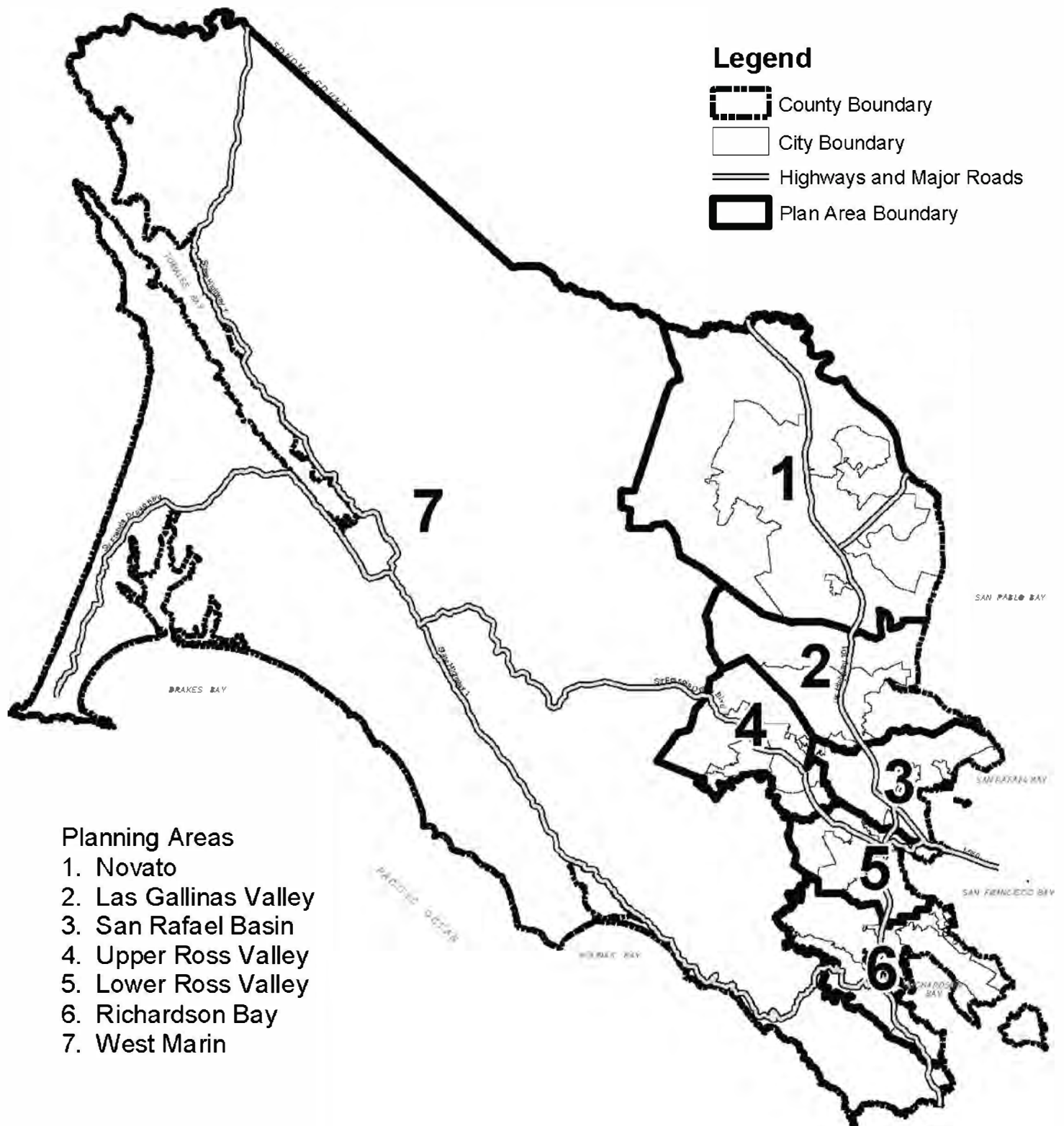
1. Novato
2. Las Gallinas
3. San Rafael Basin
4. Upper Ross Valley
5. Lower Ross Valley
6. Richardson Bay
7. West Marin

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<sup>4</sup>Marin Countywide Plan, November 6, 2007, p. 1.1-2.

<sup>5</sup>Marin Countywide Plan, November 6, 2007, p. 3.12-1.





Source: County of Marin Community Development Agency, 2006.

## Figure 3-4 Planning Areas

Marin County Housing and Safety Elements Environmental Impact Report

### 3.1.4 Community and Area Plans

The County has 26 Community Plans that contain policies for land use and development related specifically to each local area. These policies reflect the character of local communities for use in evaluating discretionary planning applications.<sup>6</sup>

- A. Black Point Community Plan (2016) – for the Black Point community, located near SR 37 in northeast Novato.
- B. Bolinas Community Plan (1978) – for Bolinas.
- C. Bolinas Gridded Mesa Plan (1984) – for bluff lands in Bolinas, overlooking Bolinas Bay and the Pacific Ocean.
- D. Dillon Beach Community Plan (1989) – for the community of Dillon Beach and its surrounding agricultural lands.
- E. East Shore Community Plan (Tomales Bay) (1997) – for an area along State Route 1 in Marin County, from Millerton Point in the south to the town of Tomales in the north.
- F. Green Point Community Plan (2016) – for the Green Point community, located near SR 37 in northeast Novato.
- G. Indian Valley Community Plan (2003) – for the Indian Valley area in northwest Novato.
- H. Inverness Ridge Community Plan (1983) – for Inverness.
- I. Kentfield/Greenbrae Community Plan (1987) – for Kentfield and Greenbrae.
- J. Kent Woodlands Land Use Policy Report (1995) – for the community of Kent Woodlands, located in Kentfield.
- K. Marin City Community Plan (1992) – for the Marin City area of Sausalito.
- L. Muir Beach Community Plan (1972) – contains information on the history, background, land use, and infrastructure of Muir Beach.
- M. Nicasio Valley Community Plan (1997) – for Nicasio.
- N. Paradise Drive Visioning Plan (1999) – for areas along Paradise Drive in Tiburon.
- O. Paradise Ranch Estates Restoration Plan (1981)– for areas within portions of the Paradise Ranch Estates subdivision in Inverness.

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<sup>6</sup>County of Marin Community Development Agency, “Community and Area Plans,” <https://www.marincounty.org/depts/cd/divisions/planning/plans-policies-and-regulations/community-and-area-plans>, accessed 4/27/22. It should be noted that the Muir Beach Community Plan, listed below, does not contain land use/development policies, but instead contains information on the history, background, land use, and infrastructure of Muir Beach.

- P. Point Reyes Station Community Plan (2001) – for Point Reyes Station.
- Q. Point San Quentin Village Land Use Policy Report (1985) – for the Point San Quentin area in San Rafael.
- R. Richardson Bay Special Area Plan (1984) – for Richardson Bay.
- S. San Geronimo Valley Community Plan (1997) – for the communities of Woodacre, San Geronimo, Forest Knolls, and Lagunitas.
- T. Santa Venetia Community Plan (2017) – for the community of Santa Venetia.
- U. Strawberry Community Plan (1973) – for the Strawberry area in Mill Valley.
- V. Strawberry Community Plan Amendments (1982) – for the Watertank Hill, De Silva Island, and Golden Gate Baptist Theological Seminary areas.
- W. Stinson Beach Community Plan (1985) – for the village of Stinson Beach.
- X. Tamalpais Area Community Plan (1992) and Appendices – for areas west of State Route 1 in Mill Valley, CA.
- Y. Tamalpais Area Community Plan Appendices (1992) – for areas west of State Route 1 in Mill Valley, CA.
- Z. Tomales Community Plan (1997) – for the town of Tomales.

In addition, the Countywide Plan contains Land Use Policy maps for each planning area that detail land use designations and other related planning information.<sup>7</sup>

## 3.2 COUNTYWIDE PLAN

Under State law (Government Code Section 65300 et seq.), every city and county is required to adopt a general plan that functions as the overarching, comprehensive, and long-range policy document. The general plan must contain at least the seven mandatory elements – land use, circulation, housing, conservation, open space, noise, and safety. In addition, cities and counties with identified disadvantaged communities must also address environmental justice in their general plans, including air quality. In 2007, the Marin County Board of Supervisors adopted the Countywide Plan (or “CWP”) for the unincorporated areas. The CWP was prepared as a comprehensive update of the 1994 Marin Countywide Plan.

## 3.3 PROPOSED PROJECT

### 3.3.1 Statutory Background

As part of its general plan, every city and county is required to adopt a housing element, as required by Government Code section 65302(c). The California Department of Housing and

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<sup>7</sup>The individual Land Use Policy Maps are located at the end of the Planning Areas section of the Built Environment Element in the Countywide Plan (following page 3.12-30).

Community Development (HCD) reviews housing elements from every local government to determine whether or not the housing element complies with state law. HCD approval of a housing element is required before a local government can adopt it as part of the general plan. Jurisdictions can opt to update their housing elements on a five-year or eight-year cycle. The eight-year cycle can provide for better coordination with updates to Regional Transportation Plans – updated every four years – that are mandated to align with housing plans in Regional Sustainable Communities Strategies.

The County last adopted updates to the Housing Element in December 2014 that addressed the period from 2015 to 2023. The proposed update analyzed in this EIR addresses the period from 2023 to 2031.

The Safety Element is one of the nine State-mandated elements of the general plan. State law requires a local government's safety element to address protection of its people from unreasonable risks associated with disasters, including earthquakes, floods, fires, and landslides. Other locally relevant safety issues, such as airport land use, emergency response, and hazardous materials spills may also be included. New state laws also require safety elements to address climate change resilience.

### **3.3.2 Proposed Housing and Safety Element Updates**

The proposed Project is comprised of updates to the Housing Element and Safety Element of the Marin Countywide Plan as required by State Planning and Zoning Law, including the facilitation of new housing growth throughout the unincorporated county in response to the region's need for more affordable and market rate housing and development of housing solutions to meet the County's 2023-2031 Regional Housing Needs Allocation (RHNA); associated amendments to other elements in the Countywide Plan as necessary to ensure consistency; and amendments to the Marin County Code to provide for effective implementation of the project<sup>8</sup> (collectively the "Project").

As part of the Housing Element Update, the Project proposes housing sites for housing that would facilitate up to 5,214 new housing units to be developed, which meets the RHNA described below as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD, also explained below.

### **3.3.3 Project Objectives**

The Housing and Safety Element updates to the Marin Countywide Plan establish the goals, policies, and programs that will provide County staff and discretionary bodies with a foundation for decisions related to long-range planning for housing development and safety related to

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<sup>8</sup>As required by Government Code section 65302[h], on or after January 1, 2018, whenever a city and/or county concurrently adopts or revises two or more general plan elements, the city and/or county shall adopt or review the environmental justice element, or the environmental justice goals, policies, and objectives in other elements. The Socioeconomic Element of the Countywide Plan includes section 4.10, "Environmental Justice," which the County is reviewing in a separate process; therefore, because the project evaluated in this EIR (i.e., the Housing and Safety Elements Update does not include any proposed revisions or updates to the Socioeconomic Element.

climate change. The overarching goal of the program is to revise the adopted Housing and Safety Elements to create a policy framework that meets the objectives listed below.

#### A. Housing Element Objectives

1. New Housing. Facilitate new housing growth throughout the unincorporated County area in response to the region's need for more affordable and market rate housing, and develop housing solutions to meet the County's 2023-2031 Regional Housing Needs Allocation (RHNA).

2. Housing Choice. Respond to the broad range of housing needs in Marin County by supporting a mix of housing types, densities, affordability levels, and designs.

3. Healthy Neighborhoods. Promote healthy neighborhoods that incorporate best practices related to land use, racial equity, mobility, housing, affordability, safety, environmental justice, community services, and design.

4. Equity. Combat housing discrimination, eliminate racial bias, undo historic patterns of segregation, and lift barriers that restrict access in order to foster inclusive communities and achieve racial equity.

5. Inclusivity. Engage residents and stakeholders to ensure equitable and inclusive processes, policies, investments, and service systems.

#### B. Safety Element Objectives

1. Safety. Establish new CWP goals, policies, and programs to include climate change adaptation and resiliency planning, sea level rise, and additional wildfire measures, and provide direction to improve emergency preparedness, response, and recovery.

2. Adaptive and Resilient Communities. Develop strategies that help people, infrastructure, and community assets adapt to and recover from evolving climate threats and vulnerabilities, and from natural and human-caused hazards.

3. Conformance with Regulatory Requirements. Develop a Safety Element that meets all the requirements under Government Code Section 65302(g), and which reflects State and local regulations for specific hazards, with the intent of protecting people and key infrastructure from damage resulting from an environmental hazard.

4. Equity. Identify communities most vulnerable to climate change impacts and establish new goals, policies, and programs for equitable public safety, emergency preparedness, response and recovery.

5. Technology. Embrace technology and innovative practices to create smart, sustainable cities and adaptable infrastructure systems.

### **3.4 PROPOSED PROJECT**

#### **3.4.1 Details of the Proposed Project**

The Proposed Project includes updates to the Housing and Safety Element as well as administrative actions to implement these elements as described in greater detail below:

A. Housing Element Update. Subsection 3.4.2 includes an overview of the Housing Element Update including a description of its purpose; the Regional Housing Needs Allocation (RHNA) for the County, the Project Site Inventory as listed in Table 3-2 and Table 3-3, and shown on Figure 3-5; and a description of the contents of the Housing Element Update document, including new and revised Housing Element Update goals, policies, and programs.

B. Safety Element Update. Subsection 3.4.3 includes an overview and a description of the Safety Element Update document, which also includes the proposed new Safety Element Update goals, policies and programs.

C. Administrative Actions. Following Subsection 3.4.3 is a description of amendments to the 2007 Countywide Plan to incorporate the updates to the Housing and Safety Elements and changes to the CWP and Zoning Code necessary to Implement “Programs” identified in both updated elements.

### **3.4.2 Housing Element Update**

A. Overview. The Housing Element Update addresses the planning period from 2023 to 2031 and is an update of the County’s State-certified Housing Element that was adopted by the Marin County Board of Supervisors on December 9, 2014. The County began the process of updating the Housing and Safety Elements in late summer/early fall 2021.

To assist in the preparation of this Housing Element Update, a community outreach program was conducted to actively engage low-income renters, people of color, disabled individuals, local residents, business and property owners, developers, neighborhood representatives, elected and appointed officials, and others during the planning process. County planning staff and the project team provided multiple forums for input and facilitated focus groups and community workshops to gather community input.

When adopted by the County and certified by the State, the Housing Element Update will be incorporated into the CWP.

B. Purpose of Housing Element Update. Among its requirements, the Housing Element is required to identify an adequate number of sites to meet the number of housing units assigned to the County by the Regional Housing Need Allocation (RHNA). As discussed below, the County considered site locations throughout unincorporated county areas to meet its goal of affirmatively furthering fair housing. The Housing Element also provides the policy framework and identifies actions the County will take to remove housing constraints and promote housing that addresses community needs.

The Project Site Inventory described in Section 3.4.2(d) presents the proposed “Project Sites” that meet the RHNA described above as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD as explained below in subsection 3.4.2(d). This is the Proposed Project. In addition to the Proposed Project, the EIR also includes analysis of additional sites as described in Section 3.4.2(e), Candidate Housing Sites, below. Information about the “Candidate Housing Sites” will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts. The proposed “Project Sites” were selected from the list of Candidate Housing Sites by the Planning Commission and Board of Supervisors based on input at a series of public hearings.

**C. Regional Housing Needs Allocation (RHNA).** California state law mandates that all California cities, towns, and counties must plan for the housing needs of its residents regardless of income. A Housing Element and RHNA are required to determine the total number of new homes needed and how affordable those homes need to be to meet the housing needs of people at all income levels. The Association of Bay Area Governments (ABAG) assigns housing production goals to every Bay Area jurisdiction, including Marin County, in the RHNA, with units identified in four categories of affordability: homes that are affordable to households earning above-moderate, moderate, low, and very-low incomes (includes extremely low income). Upon receiving its RHNA from ABAG, each local government must update the Housing Element of its General Plan to show how it plans to meet the housing needs in its community.<sup>9</sup> The County's 2015-2023 Housing Element established an action plan detailing the actions or programs to help meet the County RHNA housing needs. The County has received its final RHNA from ABAG for the 2023-2031 planning period, and is preparing the Housing Element Update analyzed in this EIR to meet RHNA required for all income levels.<sup>10</sup>

Table 3-1 shows the current RHNA for the County of Marin for the period from 2023 to 2031. As the table shows, the RHNA calls for the County to provide for development of a total of 3,569 housing units during the 2023-2031 period, consisting of 1,100 units for very low-income households, 634 units for low-income households, 512 units for moderate-income households, and 1,323 units for above-moderate-income households.

The Housing Element Update states that the County plans to meet its 2023-2031 RHNA through the identification of sites suitable for residential development, including vacant sites and sites having the potential for redevelopment that can be developed for housing within the planning period, and through rezoning as needed to allow for housing development sufficient to achieve the RHNA. The Housing Element includes a sites analysis that factored in state laws regarding site suitability applied in the context of local conditions. Sites considered include parcels on surplus school, County, and State lands; religious institutions; other vacant lands; plus commercial and residential sites not currently used to their full potential.

**Table 3-1:  
Regional Housing Needs Allocation (RHNA) for Marin County Unincorporated  
Areas, 2023-2031**

<b>Income Category<sup>1</sup></b>	<b>Number of Housing Units</b>
Very Low Income	1,100
Low Income	634
Moderate Income	512
Above Moderate Income	1,323
<b>Total:</b>	<b>3,569</b>

Source: ABAG, Final Regional Housing Needs Allocation Plan: San Francisco Bay Area, 2023-2031 (viewed at [https://abag.ca.gov/sites/default/files/documents/2022-04/Final\\_RHNA\\_Methodology\\_Report\\_2023-2031\\_March2022\\_Update.pdf](https://abag.ca.gov/sites/default/files/documents/2022-04/Final_RHNA_Methodology_Report_2023-2031_March2022_Update.pdf)), adopted December 2021, Updated March 2022, p. 26.

<sup>9</sup>Association of Bay Area Governments (ABAG), "RHNA - Regional Housing Needs Allocation," <https://abag.ca.gov/our-work/housing/rhna-regional-housing-needs-allocation>, accessed 5/1/22.

<sup>10</sup>ABAG, Final Regional Housing Needs Allocation Plan: San Francisco Bay Area, 2023-2031 (viewed at [https://abag.ca.gov/sites/default/files/documents/2022-04/Final\\_RHNA\\_Methodology\\_Report\\_2023-2031\\_March2022\\_Update.pdf](https://abag.ca.gov/sites/default/files/documents/2022-04/Final_RHNA_Methodology_Report_2023-2031_March2022_Update.pdf)), adopted December 2021, Updated March 2022.

- 1 Income categories are defined as follows:  
 Very low income = less than 50 percent of area median income  
 Low income = between 50 and 80 percent of area median income  
 Moderate income = between 80 and 120 percent of area median income  
 Above moderate income = greater than 120 percent of area median income

**D. Project Site Inventory Details (“Proposed Project”).** The County has identified a combination of vacant or underutilized residential, mixed-use, publicly owned, and/or other nonresidential sites that can support development of 3,928 units, including 1,849 lower income units, 517 moderate income units, 1,306 above moderate income units, and 256 Accessory Dwelling Units (ADUs) as shown in Table 3-2. The Project Sites were selected in April 2022, after conducting workshops in November of 2021, January 2022, and March of 2022. The Planning Commission and Board of Supervisors endorsed the proposed “Project Sites” identified in Figure 3-5 and Table 3-2 for analysis in the Environmental Impact Report.

In addition to evaluating the potential 3,928 units that can be developed on the proposed “Project Sites”, the EIR also evaluates the potential impacts associated with a potential density bonus of 35%. While not all projects will seek a density bonus, the inclusionary housing requirements of the Marin County Code (§§22.22.020, 22.22.080, and 22.22.090) make housing development of 5 or more units eligible for a density bonus by requiring 20 percent of the total number of dwelling units, or lots, to be affordable to households at 60 percent of the Area Median Income. Under state density bonus provisions, this level of affordability will allow applicants to request a density bonus of up to 35 percent. Consequently, the total number of units evaluated in the EIR includes the potential that a density bonus could be sought.

Consistent with HCD recommendations, the County has also proposed sites that support more units than required by the RHNA to create a “buffer” should sites develop at less than the assumed density or not at all. The proposed buffer for lower income units (very low- and low-income categories) and moderate-income units are 15% and 16% respectively, consistent with the HCD recommended buffer of between 15 and 30 percent. The Project Sites plus the density bonus units and the HCD recommended buffer totals 5,214 units, which is the proposed Project (“Project”). The Project sites, and associated development assumptions, are listed in Table 3-2 and Table 3-3 and shown on Figure 3-5.

**Table 3-2:  
2023-2031 Housing Element Proposed Project Sites and Associated Development Potential**

	Potential Unit Development			
	Lower Income	Moderate Income	Above Moderate Income	Total
(A) Proposed Project Sites <sup>[1]</sup>	1,849	517	1,306	3,672
(B) Development Units (ADUs)	154	77	25	256
<b>Total Proposed Project Sites [(A)+(B)]</b>	<b>2,003</b>	<b>594</b>	<b>1,332</b>	<b>3,928</b>
<b>Density Bonus (35% of A)</b>				<b>1,286</b>
<b>Project Site Inventory</b>				<b>5,214</b>



**Table 3-2:  
2023-2031 Housing Element Proposed Project Sites and Associated Development Potential**

	Potential Unit Development			
	Lower Income	Moderate Income	Above Moderate Income	Total
(C) 2023-2031 Regional Fair Share Housing Need <sup>[2]</sup>	1,734	512	1,323	3,569
HCD Buffer	269	82	9	359
Buffer for Sufficient Capacity/No Net Loss (SB 166) <sup>[3]</sup>	15%	16%	0.7%	10%
California Department of Housing and Community Development (HCD) No Net Loss Recommended Buffer Goal	15 to 30%	15 to 30%	N/A	N/A

SOURCE: County of Marin; MIG, Inc., 2022.

<sup>[1]</sup> “Recommended Housing Sites” MIG, Inc., 4/25/22.

<sup>[2]</sup> RHNA breakdowns for “lower” income category include 1,100 units for very low income and 634 units for low income, for a subtotal of 1,734 units.

<sup>[3]</sup> To ensure the County’s sites inventory maintains sufficient capacity at all times to accommodate the RHNA by income group throughout the planning period, a buffer of 15 to 30 percent has been added for the lower-income and moderate-income RHNA categories. The HCD Buffer percentage is calculated by taking the difference between the total proposed project sites [(A) + (B)] and the regional fair share housing need [C], then dividing that difference by the proposed project sites [A]. For example, for the lower income category above, 1,849 (A) + 154 (B) = 2,003; 2,003 – 1,734 (C) = 269 (the HCD Buffer); 269 ÷ 1,849 (A) = 0.145, or approx. 0.15, or 15 percent.

Note: This breakdown includes density bonus opportunities in order to demonstrate the maximum reasonable development capacity for conservative environmental analysis purposes.

**Table 3-3:  
Proposed Project Sites**

Site ID	Site Name	APN	Acres	Address	Existing GP/Zoning	Density Allowance (du/ac)	Used in Previous HE?	Housing Units by RHNA Income Categories			
								Lower	Moderate	Above Moderate	Total
1	25 Bayfield (Kentfield)	022-071-01	0.4	25 Bayview Rd, Kentfield	MF3/RMP-6	10	No	0	0	3	3
3	Kentfield Commercial Underutilized	074-031-54	0.1	923 Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	4	0	4
		074-031-65	0.3	921 Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	6	0	6
		074-031-68	0.2	935 Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	5	0	5
		074-031-69	0.1	Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	3	0	3
		074-031-39	0.3	929 Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	8	0	8
		074-031-45	0.2	907 Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	5	0	5
		074-031-61	0.3	913 Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	7	0	7
		074-031-63	0.1	Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	4	0	4
		074-031-74	0.2	943 Sir Francis Drake Blvd, Kentfield	NC/RMPC	0	No	0	5	0	5
		074-031-75	0.7	901 Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	18	0	0	18
		074-031-77	0.2	911 Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	6	0	6
5	Marin County Juvenile Hall	164-640-01	33	2 Jeannette Prandi Way, Lucas Valley	PF/PF	30	No	80	0	0	80
6	Marin Gateway Center	052-490-08	4.2	190 Donahue St, Marin City	GC/CP	30	No	0	50	50	100
7	Marinwood Plaza; Dixie School District Properties (Marinwood Plaza adjacent)	164-471-64	0.4	121 Marinwood Ave, Marinwood	GC/CP	30	4th & 5th	16	0	0	16
		164-471-65	1.9	155 Marinwood Ave, Marinwood	GC/CP	30	4th & 5th	0	0	0	0

**Table 3-3:  
Proposed Project Sites**

Site ID	Site Name	APN	Acres	Address	Existing GP/Zoning	Density Allowance (du/ac)	Used in Previous HE?	Housing Units by RHNA Income Categories			
								Lower	Moderate	Above Moderate	Total
		164-471-69	1.1	175 Marinwood Ave, Marinwood	GC/CP	30	4th & 5th	34	0	0	34
		164-471-70	1.5	197 Marinwood Ave, Marinwood	GC/CP	30	4th & 5th	30	0	0	30
		164-471-71	0.2	Marinwood Ave, Marinwood	GC/CP	30	4th & 5th	7	0	0	7
		164-471-72	0.3	Marinwood Ave, Marinwood	GC/CP	30	4th & 5th	13	0	0	13
8	McPhail School	180-151-18	4.3	1565 Vendola Dr, Santa Venetia	PF-SF6/PF-RSP-4.36	0	No	0	0	33	33
		180-161-09	1	N San Pedro Rd, Santa Venetia	PF-SF6/PF-RSP-4.36	0	No	0	0	0	0
		180-161-10	4.3	N San Pedro Rd, Santa Venetia	PF-SF6/PF-RSP-4.36	0	No	0	0	0	0
9	Old Gallinas Children Center	180-123-01	7.7	251 N San Pedro Rd, Santa Venetia	PF-SF6/PF-RSP-5.8	30	No	50	0	0	50
10	Olema Commercial	166-202-01	1	10002 State Route 1, Olema	C-NC/C-VCR	20	No	0	10	0	10
		166-213-01	0.5	9870 State Route 1, Olema	C-NC/C-VCR	20	No	0	0	5	5
		166-213-02	1	9840 State Route 1, Olema	C-NC/C-VCR	20	No	0	10	0	10
		166-202-04	1.1	9950 Sir Francis Drake Blvd, Olema	C-NC/C-VCR	20	No	0	11	0	11
11	San Domenico School	176-300-30	522.4	1500 Butterfield Rd, Sleepy Hollow	PR/RMP-0.1	30	No	50	0	0	50
12	St. Vincent's School for Boys	155-011-29	20.2	St. Vincent Dr, Santa Venetia	PD/A2	20	4th & 5th	0	0	0	0

**Table 3-3:  
Proposed Project Sites**

Site ID	Site Name	APN	Acres	Address	Existing GP/Zoning	Density Allowance (du/ac)	Used in Previous HE?	Housing Units by RHNA Income Categories			
								Lower	Moderate	Above Moderate	Total
		155-011-28	74	St. Vincent Dr, Santa Venetia	PD/A2	20	4th & 5th	0	0	0	0
		155-011-30	221	St. Vincent Dr, Santa Venetia	PD/A2	20	4th & 5th	440	0	240	680
13	Strawberry Commercial	043-151-03	0.2	670 Redwood Hwy Frontage Rd, Strawberry	GC/H1	30	No	0	0	6	6
		043-151-09	0.3	680 Redwood Hwy Frontage Rd, Strawberry	GC/H1	30	No	0	0	7	7
		043-151-02	0.3	664 Redwood Hwy Frontage Rd, Strawberry	GC/H1	30	No	0	0	9	9
		043-151-31	1.5	690 Redwood Hwy Frontage Rd, Strawberry	GC/H1	30	No	0	0	38	38
14	Church of Jesus Christ	180-272-03	3.5	220 N San Pedro Rd, Santa Venetia	SF5/A2-B2	20	No	35	0	0	35
	Congregation Rodef Shalom Marin	180-281-34	2	170 N San Pedro Rd, Santa Venetia	SF5/A2-B2	20	No	0	13	0	13
	Bernard Osher Marin Jewish Community Center	180-281-35	1.2	180 N San Pedro Rd, Santa Venetia	SF5/A2-B2	20	No	10	0	0	10
		180-281-21	1.6	200 N San Pedro Rd, Santa Venetia	SF5/A2-B2	20	No	13	0	0	13
	Bernard Osher Marin Jewish Community Center	180-281-25	0.9	210 N San Pedro Rd, Santa Venetia	OC/AP	20	No	13	0	0	13
16	Atherton Corridor	143-101-35	1	761 Atherton Ave, North Novato	SF3/A2-B4	20	No	0	4	0	4
		143-101-37	4	777 Atherton Ave, North Novato	SF3/A2-B4	20	No	30	8	0	38
		143-101-20	4.8	791 Atherton Ave, North Novato	SF3/A2-B4	20	No	37	13	0	50

**Table 3-3:  
Proposed Project Sites**

Site ID	Site Name	APN	Acres	Address	Existing GP/Zoning	Density Allowance (du/ac)	Used in Previous HE?	Housing Units by RHNA Income Categories			
								Lower	Moderate	Above Moderate	Total
		143-101-17	5.6	805 Atherton Ave, North Novato	SF3/A2-B4	20	No	42	13	0	55
20	Buck Center Vacant Property	125-180-79	97.3	Redwood Hwy, Blackpoint	AG1/A60	1	No	0	0	24	24
		125-180-85	136.5	Redwood Hwy, Blackpoint	AG1/A60	20	No	0	0	225	225
21	Cal Park	018-086-17	0.2	Woodland Ave, California Park	MF2/RSP-4	30	4th	0	0	4	4
		018-086-18	0.7	Woodland Ave, California Park	MF2/RSP-4	30	4th	0	0	17	17
		018-075-28	0.9	Woodland Ave, California Park	MF2/RSP-4	30	4th	0	0	20	20
		018-074-16	0.8	Woodland Ave, California Park	MF2/RSP-4	30	No	30	0	0	30
		018-081-04	0.4	Auburn St, California Park	MF2/RSP-4	30	No	0	0	24	24
		018-083-01	0.1	Auburn St, California Park	MF2/RSP-4	8	No	0	0	1	1
		018-085-23	0.4	Auburn St, California Park	MF2/RSP-4	8	No	0	0	17	17
		018-083-09	0.1	Auburn St, California Park	MF2/RSP-4	8	No	0	0	2	2
		018-082-13	0.5	Auburn St, California Park	MF2/RSP-4	8	No	0	0	3	3
		018-084-12	1	Auburn St, California Park	MF2/RSP-4	8	No	0	0	2	2
22	Carmelite Monastery of the Mother of God	164-290-80	3.2	530 Blackstone Dr, Santa Venetia	PR/RMP-0.1	20	No	0	32	0	32
23	College of Marin Parking Lot	071-132-11	0.8	Sir Francis Drake Blvd, Kentfield	PF/PF	30	No	21	0	0	21
		071-132-12	0.3	Sir Francis Drake Blvd, Kentfield	PF/PF	30	No	7	0	0	7
24		074-092-11	0.2	139 Kent Ave, Kentfield	PF/PF	20	No	3	0	0	3

**Table 3-3:  
Proposed Project Sites**

Site ID	Site Name	APN	Acres	Address	Existing GP/Zoning	Density Allowance (du/ac)	Used in Previous HE?	Housing Units by RHNA Income Categories			
								Lower	Moderate	Above Moderate	Total
	College of Marin Parking Lot	074-181-18	2.7	140 Kent Ave, Kentfield	PF/PF	20	No	48	0	0	48
		074-092-17	0.2	141 Kent Ave, Kentfield	PF/PF	20	No	2	0	0	2
	College of Marin (Commercial Frontage)	074-031-56	0.2	937 Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	10	0	10
		074-031-58	0.1	941 Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	5	0	5
		074-031-60	0.1	939 Sir Francis Drake Blvd, Kentfield	NC/RMPC	30	No	0	10	0	10
25	Cornerstone Community Church of God	052-140-38	0.4	626 Drake Ave, Marin City	NC/RMPC	20	No	0	4	0	4
29	Grandi Building/Site	119-234-01	2.5	54 B ST, Pt. Reyes Station	C-NC/C-VCR-B2	20	4th & 5th	25	0	0	25
30	Greenpoint Nursery	153-190-24	19.6	275 Olive Ave, Blackpoint	AG1/ARP-60	16	No	0	0	53	53
31	Hidden Valley Elementary School Vacant Area	177-011-13	0.6	Fawn Dr, Sleepy Hollow	PF-SF4/PF-RSP-2	8	No	0	0	5	5
33	Inverness County Site	112-220-08	0.1	Sir Francis Drake Blvd, Inverness	C-SF3/C-RSP-0.33	20	No	0	0	0	0
		112-220-09	0.9	Sir Francis Drake Blvd, Inverness	C-SF3/C-RSP-0.33	20	No	0	0	13	13
36	Inverness Underutilized Residential	112-143-03	0.2	20 Balmoral Way, Inverness	C-SF3/C-RSP-1	7	No	0	0	2	2
37	Inverness Underutilized Residential	112-143-04	0.2	30 Balmoral Way, Inverness	C-SF3/C-RSP-1	7	No	0	0	2	2
38	Inverness Underutilized Residential	112-143-05	0.2	40 Balmoral Way, Inverness	C-SF3/C-RSP-1	7	No	0	0	2	2
41	Inverness Underutilized Residential	112-143-06	0.2	50 Balmoral Way, Inverness	C-SF3/C-RSP-1	7	No	0	0	2	2
42	Inverness Underutilized Residential	112-144-28	0.3	55 Balmoral Way, Inverness	C-SF3/C-RSP-1	7	No	0	0	2	2

**Table 3-3:  
Proposed Project Sites**

Site ID	Site Name	APN	Acres	Address	Existing GP/Zoning	Density Allowance (du/ac)	Used in Previous HE?	Housing Units by RHNA Income Categories			
								Lower	Moderate	Above Moderate	Total
43	Inverness Underutilized Residential	112-143-07	0.4	60 Balmoral Way, Inverness	C-SF3/C-RSP-1	7	No	0	0	2	2
44	Inverness Underutilized Residential	112-144-25	0.3	75 Balmoral Way, Inverness	C-SF3/C-RSP-1	7	No	0	0	2	2
46	Jack Krystal Hotel Parcel Site	052-227-09	1.5	260 Redwood Hwy Frontage Rd, Almonte	RC/BFC-RCR	30	No	0	0	36	36
47	Kentfield Catholic Church	022-010-21	1.4	215 Bon Air Rd, Kentfield	PF-SF5/R1-B2	30	No	0	14	0	14
52	Donahue Highlands (formerly LiBao)	052-140-33	49.2	Off Donahue St., Marin City	PR/RMP-0.5	25	No	0	0	25	25
53	Lucas Valley Environs Vacant	164-280-35	54.2	1501 Lucas Valley Road, Lucas Valley Environs	AG1/A60	7	No	0	0	26	26
56	Nicasio Corporation Yard - Marin County	121-050-34	13.9	5600 Nicasio Valley Road, Nicasio	AG1/ARP-60	20	No	16	0	0	16
57	North Knoll Rd/Saint Thomas Dr	034-012-26	5.9	Knoll Rd, Strawberry	PR/RMP-0.2	16	No	0	0	23	23
		034-061-09	0.6	Knoll Rd, Strawberry	PR/RMP-0.2	16	No	0	0	3	3
58	Oak Manor Commercial Center	174-011-36	0.5	2400 Sir Francis Drake Blvd, Unincorporated Fairfax	GC/C1	30	4th & 5th	11	0	0	11
59	Oak Manor Commercial Center	174-011-33	1.1	2410 Sir Francis Drake Blvd, Unincorporated Fairfax	GC/C1	30	4th & 5th	25	0	0	25
60	Office - Forest Knolls (Upper Floors)	168-141-12	0.1	6900 Sir Francis Drake Blvd, Forest Knolls	NC/VCR	20	No	0	0	2	2
61	Office - Lagunitas (Upper Floors and Rear Prop)	168-175-06	0.9	7120 Sir Francis Drake Blvd, Lagunitas	GC/H1	20	No	16	0	0	16

**Table 3-3:  
Proposed Project Sites**

Site ID	Site Name	APN	Acres	Address	Existing GP/Zoning	Density Allowance (du/ac)	Used in Previous HE?	Housing Units by RHNA Income Categories			
								Lower	Moderate	Above Moderate	Total
62	Office - Lagunitas (Upper Floors and Rear Prop)	168-192-28	1.3	7282 Sir Francis Drake Blvd, Lagunitas	GC/CP	20	No	10	0	4	14
63	Office Building	164-481-10	2.4	7 Mt Lassen Dr, Lucas Valley	GC/CP	30	No	58	0	0	58
64	Olema Catholic Church	166-181-01	2.4	10189 State Route 1, Olema	C-NC/C-VCR	20	No	24	0	0	24
65	Outnumbered2, LLC	180-261-10	27.9	Oxford Drive, Santa Venetia	SF5/A2-B2	4	No	0	0	28	28
66	Pan Pac Ocean Site	034-012-21	1.6	Eagle Rock Rd, Strawberry	PR/RMP-0.2	16	No	0	0	3	3
		034-012-27	8.4	Eagle Rock Rd, Strawberry	PR/RMP-0.2	16	No	0	0	17	17
		034-012-28	1.2	Eagle Rock Rd, Strawberry	PR/RMP-0.2	16	No	0	0	2	2
		034-012-29	5	Eagle Rock Rd, Strawberry	PR/RMP-0.2	16	No	0	0	10	10
67	Peace Lutheran Church	052-062-05	2.7	205 Tennessee Valley Rd, Tamalpais	SF6/RA-B1	20	No	20	0	0	20
68	Presbyterian Church San Geronimo	169-101-21	0.8	6001 Sir Francis Drake Blvd, San Geronimo	SF5/R1-B2	20	No	0	15	0	15
69	Presbytery of the Redwoods	119-202-05	0.3	11445 State Route 1, Pt. Reyes Station	C-SF4/C-RA-B3	20	No	0	3	0	3
70	Pt. Reyes Coast Guard Rehabilitation/Conversion	119-240-73	31.4	100 Commodore Webster Dr, Pt. Reyes Station	C-OA/C-OA	0	No	50	0	0	50
71	Pt. Reyes County Vacant Site	119-260-03	2	9 Giacomini Rd, Pt. Reyes Station	C-NC/C-RMPC	20	No	32	0	0	32
		119-270-12	0.3	10 Giacomini Rd, Pt. Reyes Station	C-NC/C-RMPC	20	No	5	0	0	5
73	Pt. Reyes Village (5th St)	119-222-08	1	60 Fifth St, Pt. Reyes Station	C-SF3/C-RSP-1	20	No	17	0	0	17



**Table 3-3:  
Proposed Project Sites**

Site ID	Site Name	APN	Acres	Address	Existing GP/Zoning	Density Allowance (du/ac)	Used in Previous HE?	Housing Units by RHNA Income Categories			
								Lower	Moderate	Above Moderate	Total
74	Pt. Reyes Village Red/Green Barn	119-198-05	1.5	510 Mesa Rd, Pt. Reyes Station	C-NC/C-VCR-B2	20	No	24	0	0	24
76	Sacramento/San Anselmo Properties	177-220-41	0.3	San Francisco Blvd, Sleepy Hollow	SF6/R1	30	No	7	0	0	7
77	Sacramento/San Anselmo Properties	177-203-03	0.7	4 Sacramento Ave, Sleepy Hollow	SF6/R1	30	No	16	0	0	16
78	Sacramento/San Anselmo Properties	177-203-04	0.8	404 San Francisco Blvd, Sleepy Hollow	SF6/R1	30	No	18	0	0	18
79	Sacramento/San Anselmo Properties	177-203-09	0.6	60 Sacramento Ave, Sleepy Hollow	SF6/R1	30	No	15	8	0	23
83	Vacant Santa Venetia	180-171-32	1.1	180-171-32 (N San Pedro Rd), Santa Venetia	SF5/A2-B2	4	No	0	0	2	2
89	Shoreline Unified School District	102-080-19	2.1	Shoreline Highway, Tomales	C-SF3/C-RSP-1.6	20	No	35	0	0	35
90	Shoreline Unified School District	102-080-20	0.4	Shoreline Highway, Tomales	C-SF3/C-RSP-1.6	20	No	9	0	0	9
93	Sloat Garden Center	071-191-47	1.1	700 Sir Francis Drake Blvd, Kentfield	SF6/R1	30	No	26	0	0	26
		071-191-48	0.2	700 Sir Francis Drake Blvd, Kentfield	SF6/R1	30	No	5	0	0	5
95	Stinson Beach Community Center - Vacant	195-211-05	0.9	10 Willow Ave, Stinson Beach	C-SF6/C-R1	7	No	0	0	5	5
97	Stinson Beach Commercial	195-193-35	0.3	3422 State Route 1, Stinson Beach	C-NC/C-VCR	20	No	0	0	5	5
99	Stinson Beach Underutilized Residential	195-193-15	0.3	128 Calle Del Mar, Stinson Beach	C-SF6/C-R1	7	No	0	0	2	2
		195-193-18	0	129 Calle Del Mar, Stinson Beach	C-SF6/C-R1	7	No	0	0	1	1
101	Strawberry Village Center (North of Belvedere Dr)	043-321-03	9.1	800 Redwood Hwy Frontage Rd, Strawberry	GC/RMPC	30	No	28	0	0	28

**Table 3-3:  
Proposed Project Sites**

Site ID	Site Name	APN	Acres	Address	Existing GP/Zoning	Density Allowance (du/ac)	Used in Previous HE?	Housing Units by RHNA Income Categories			
								Lower	Moderate	Above Moderate	Total
		043-151-30	3.9	750 Redwood Hwy Frontage Rd, Strawberry	GC/RMPC	30	No	72	0	0	72
102	Subud California	177-202-08	2.6	100 Sacramento Ave, Sleepy Hollow	PR/RMP-0.1	20	No	0	4	0	4
104	Tam Junction State Vacant Lot	052-041-27	0.5	Shoreline Hwy, Tamalpais	MF4.5/RMP-12.45	30	4th	0	12	0	12
106	Tomales	102-051-07	0.6	200 Valley Ave, Tomales	C-NC/C-VCR-B1	20	No	0	0	6	6
107	Tomales	102-075-09	0.5	29 John St, Tomales	C-NC/C-VCR-B1	20	No	0	0	5	5
109	Tomales Catholic Church	102-080-23	1.3	26825 State Route 1, Tomales	C-NC/C-VCR-B1	20	No	0	13	0	13
110	Tomales Joint Union High School District	102-080-10	0.7	State Route 1, Tomales	C-SF3/C-RSP-1.6	20	No	0	14	0	14
112	Tomales Nursery	102-051-09	0.3	27235 State Route 1	C-NC/C-VCR-B1	20	No	0	0	3	3
113	Tomales Nursery	102-051-08	0.3	27235 State Route 1	C-NC/C-VCR-B1	20	No	0	0	3	3
114	Vacant Blackpoint (Olive Ave)	143-110-31	55.2	300 Olive Ave, Blackpoint	SF3/ARP-2	4	No	0	0	58	58
116	Vacant Nicasio	121-080-05	0.2	4449 Nicasio Valley Rd, Nicasio	NC/RMPC-1	20	No	0	0	4	4
120	Vacant Pt. Reyes Station	119-203-01	0.1	Mesa Rd, Pt. Reyes Station	C-NC/C-VCR-B2	20	No	0	0	2	2
121	Vacant Pt. Reyes Station	119-203-03	0.1	Mesa Rd, Pt. Reyes Station	C-NC/C-VCR-B2	20	No	0	0	2	2
124	Vacant Santa Venetia	179-332-19	1	179-332-19 (Edgehill Way), Santa Venetia	SF6/R1	7	No	0	0	3	3
126	Vacant Tomales	102-062-01	0.7	Dillon Beach Rd, Tomales	C-SF6/C-RSP-7.26	7	No	0	0	4	4
127	Vacant Tomales	102-075-02	0.3	Shoreline Hwy, Tomales	C-NC/C-VCR-B1	20	No	0	0	5	5

**Table 3-3:  
Proposed Project Sites**

Site ID	Site Name	APN	Acres	Address	Existing GP/Zoning	Density Allowance (du/ac)	Used in Previous HE?	Housing Units by RHNA Income Categories			
								Lower	Moderate	Above Moderate	Total
128	Vacant Tomales	102-075-06	0.3	Shoreline Hwy, Tomales	C-NC/C-VCR-B1	20	No	0	0	6	6
129	Vacant Tomales	102-075-07	0.1	Shoreline Hwy, Tomales	C-NC/C-VCR-B1	20	No	0	0	2	2
130	Vacant Tomales	102-041-44	4.8	290 Dillon Beach Rd, Tomales	C-SF6/C-RSP-7.26	7	No	0	0	13	13
133	Residential next to Forest Knolls Trailer Park	168-131-04	6.5	6760 Sir Francis Drake Boulevard, Forest Knolls	SF3/RA-B4	20	No	0	0	8	8
134	Saint Cecilia Church	168-183-04	0.9	428 W. Cintura, Lagunitas	SF4/R1-B3	30	No	16	0	0	16
136	Woodacre Fire Station	172-111-01	0.4	33 Castle Rock, Woodacre	SF5/R1-B2	20	No	0	10	0	10
		172-111-02	0.8	33 Castle Rock, Woodacre	SF5/R1-B2	20	No	0	0	0	0
		172-104-02	1.4	33 Castle Rock, Woodacre	SF5/R1-B2	20	No	0	0	0	0
146	MLK Academy School Site	052-140-39	8.4	610 Drake Ave, Marin City	PF/PF	20	No	0	63	0	63
147	Vacant Bayhills Drive	180-333-01	1.5	Bayhills Drive, Santa Venetia	PR/RMP-1	8	No	0	0	5	5
148	Strawberry Recreation District Site	043-361-54	3.1	Redwood Hwy Frontage Rd, Strawberry	MF4/RMP-12.1	30	No	46	0	0	46
	<b>Subtotal</b>							<b>1,655</b>	<b>402</b>	<b>1,138</b>	<b>3,195</b>
A	Downtown Project	193-061-03	1.8	31 Wharf Rd, Bolinas	C-SF5/C-RA-B2	0	No	0	0	8	8
B	Aspen Lots	192-102-22	0.2	430 Aspen Rd, Bolinas	C-SF5/C-RA-B2	0	No	2	0	0	2
C	Albion Monolith	018-087-13	0.5	33 Albion St, California Park	MF3/RMP-9	0	No	1	0	8	9

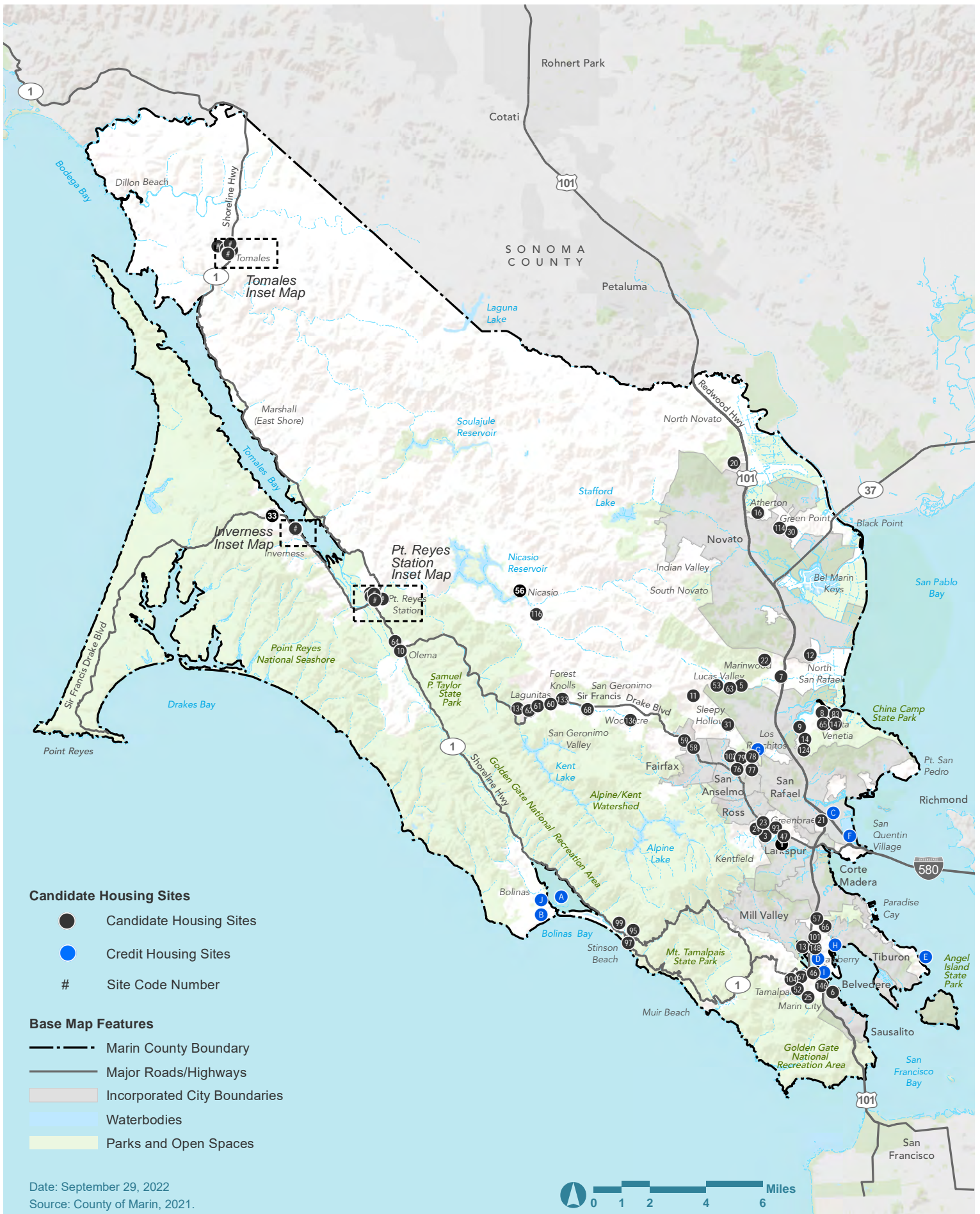
**Table 3-3:  
Proposed Project Sites**

Site ID	Site Name	APN	Acres	Address	Existing GP/Zoning	Density Allowance (du/ac)	Used in Previous HE?	Housing Units by RHNA Income Categories			
								Lower	Moderate	Above Moderate	Total
		018-087-14	1.2	37 Albion St, California Park	MF3/RMP-9	0	No	0	0	0	0
D	150 Shoreline	052-371-03	0.5	150 Shoreline Hwy, Strawberry	GC/CP	0	4th	0	0	10	10
		052-371-04	0.9	150 Shoreline Hwy, Strawberry	GC/CP	0	4th	0	0	0	0
		052-371-06	0.3	150 Shoreline Hwy, Strawberry	GC/CP	0	4th	0	0	0	0
		052-371-07	0.3	150 Shoreline Hwy, Strawberry	GC/CP	0	4th	0	0	0	0
E	Martha Company	059-251-05	109.457	059-251-05	PR, SF6/R1, RMP-0.2	0	No	0	0	43	43
F	San Quentin Adjacent Vacant Property	018-152-12	55.2	E Sir Francis Drake Blvd, San Quentin	PF/A2-B2	0	No	115	115	0	230
G	Karuna	177-220-10	10.8	1 Sacramento Ave, Sleepy Hollow	MF2/RMP-1.0	1	No	0	0	10	10
H	North Coast Seminary	043-261-25	48.4	201 Seminary Dr, Strawberry	MF2/RMP-2.47	0	4th	0	0	89	89
		043-261-26	25.1	300 Storer Dr, Strawberry	MF2/RMP-2.47	0	4th	0	0	0	0
I	825 Drake	052-112-03	1	825 Drake Ave, Marin City	MF4.5/RMP-34	0	No	74	0	0	74
J	Overlook Lots	192-061-14	0.5	530 Overlook Dr, Bolinas	C-SF5/C-RA-B2	0	No	2	0	0	2
	<b>Subtotal</b>							<b>194</b>	<b>115</b>	<b>168</b>	<b>477</b>
	<b>TOTAL PROPOSED PROJECT SITES</b>							<b>1,849</b>	<b>517</b>	<b>1,306</b>	<b>3,672</b>

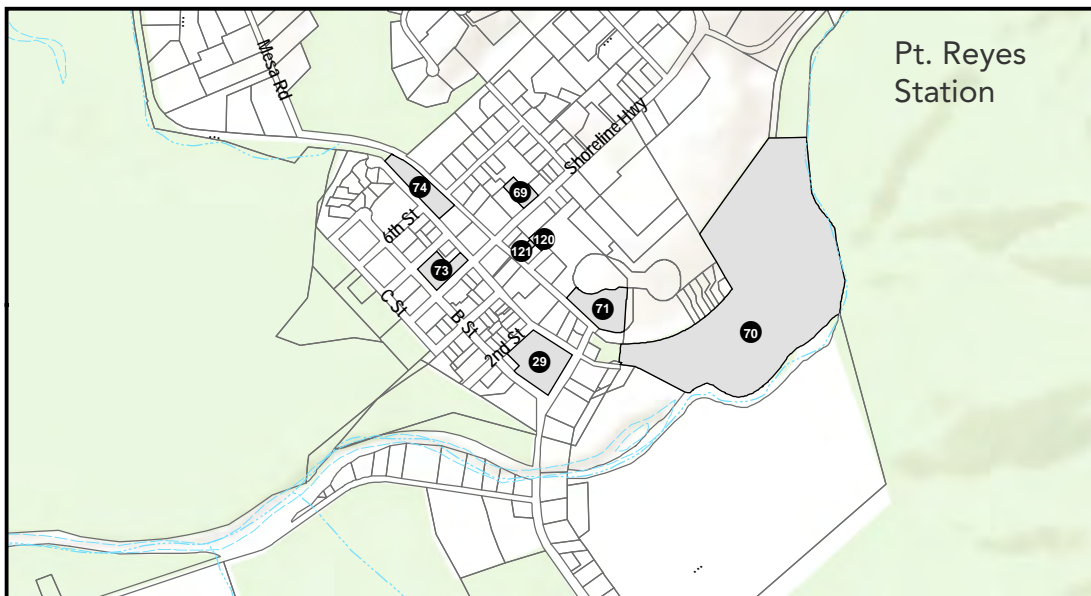
**GP/Zoning Codes**

A60 = Agriculture and Conservation  
 A2 = Agriculture Limited  
 A2-B2 = Agriculture Limited  
 AG1 = Agricultural  
 AP = Administrative and Professional  
 ARP-2 = Agriculture Residential Planned  
 ARP-60 = Agriculture Residential Planned  
 BFC-RCR = Resort and Commercial Recreation  
 C1 = (Retail Business) District  
 CP = Planned Commercial  
 C-NC = Coastal Neighborhood Commercial  
 C-OA = Coastal open area districts  
 C-RA-B3 = Coastal RA (Residential, Agricultural) District  
 C-R1 = Residential Single Family  
 C-RMPC = Coastal residential multiple planned commercial district  
 C-RSP-0.33 = Coastal residential single-family planned district  
 C-RSP-1 = Coastal residential single-family planned district  
 C-RSP-1.6 = Coastal residential single-family planned district  
 C-RSP-7.26 = Residential Single Family Planned  
 C-SF3 = Coastal Single Family  
 C-SF4 = Coastal Single Family  
 C-VCR = Village Commercial Residential  
 C-VCR-B1 = Village Commercial Residential  
 C-VCR-B2 = Village Commercial Residential  
 GC = General Commercial  
 H1 = Limited Roadside Business  
 MF2 = Multi-family  
 MF3 = Multi-family  
 MF4 = Multi-family  
 MF4.5 = Multi-family  
 NC = Neighborhood Commercial  
 OC = Office Commercial  
 PD = Planned Designation

PF = Public Facilities  
 PF-RSP = Public Facilities-Residential Single-Family Planned  
 PF-RSP-4.36 = Residential Single Family Planned  
 PF-RSP-5.8 = Residential Single Family Planned  
 PF-SF4 = Public Facility Single Family  
 PF-SF5 = Public Facility Single Family  
 PF-SF6 = Public Facility Single Family  
 PR = Planned Residential  
 R1 = Residential Single Family  
 R1-B2 = Residential Single Family  
 R1-B3 = Residential Single Family  
 RA-B1 = (Residential, Agricultural) District  
 RA-B4 = (Residential, Agricultural) District  
 RC = Recreational Commercial  
 RMP = Residential Multiple Planned  
 RMP-0.1 = Residential Multiple Planned  
 RMP-0.2 = Residential Multiple Planned  
 RMP-0.5 = Residential Multiple Planned  
 RMP-1 = Residential Multiple Planned  
 RMP-6 = Residential Multiple Planned  
 RMP-2.47 = Residential Multiple Planned  
 RMP-9 = Residential Multiple Planned  
 RMP-12.1 = Residential Multiple Planned  
 RMP-12.45 = Residential Multiple Planned  
 RMP-34 = Residential Multiple Planned  
 RMPC = Residential Commercial Multiple Planned  
 RMPC-1 = Residential Commercial Multiple Planned  
 RSP-4 = Residential Single Family Planned  
 SF3 = Single Family  
 SF4 = Single Family  
 SF5 = Single Family  
 SF6 = Single Family  
 VCR = Village Commercial Residential



**Figure 3-5 Project Sites**



Candidate Housing Sites

- Candidate Housing Sites
- # Site Code Number

Base Map Features

- Marin County Boundary
- Major Roads/Highways
- Incorporated City Boundaries
- Waterbodies
- Parks and Open Spaces



Date: September 29, 2022  
Source: County of Marin, 2021.

**Figure 3-6 Project Sites (Cont.)**

E. Candidate Housing Sites. The initial site identification process studied up to 10,993 possible “Candidate Housing Sites” that were suitable for residential development within the Housing Element planning period of 2023 through 2031. The 150 Candidate Housing Sites contained a development potential that would allow up to 10,993 units, including Accessory Dwelling Units, and Density Bonus allowances. The Marin County Planning Commission and Board of Supervisors selected from the Candidate Housing Sites to identify the “Project Sites” described in Section 3.4.2(d) that are proposed to meet the County’s RHNA of 3,569 units.

This Candidate Housing Site list presents a greater number of sites than required by the RHNA to allow for reductions to reflect project objectives, policy considerations and environmental issues. In selecting the proposed Project Sites, the Board of Supervisors and Planning Commission selected from the Candidate Site List to reflect priorities related to distribution of sites throughout the County, address racial equity and historic patterns of segregation, encourage infill and redevelopment opportunities, and consider environmental hazards. Additional constraints to housing development that were identified by the County include:

- Limited available vacant land;
- Environmental constraints (including existing conditions such as steep slopes, biological habitat, or agricultural lands, and potential hazards such as wildland fires, sea level rise, or flooding);
- Areas lacking availability to transit, job centers, and public or community services; and
- Limited existing infrastructure or areas where infrastructure improvements may not be feasible.

Because the selection process occurs before the CEQA analysis is complete, this EIR includes an assessment of environmental issues associated with the Candidate Housing Sites to allow for informed consideration of alternative approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential impacts. The Marin County Planning Commission and Board of Supervisors will provide input and direction on the final site selection as part of the Housing and Safety Element adoption process.

F. Housing Element Update Description. The Housing Element Update consists of five chapters, each of which addresses a major subject area, as summarized below. In addition to these five chapters, four appendices are included to the Housing Element Update that contain technical details and other information pertaining to community outreach efforts conducted (Appendix A), review of the 2015 Housing Element (Appendix B), a sites inventory (Appendix C), and a comprehensive discussion of the County’s commitment to specific meaningful actions to affirmatively furthering fair housing (Appendix D).

1. Chapter 1: Introduction. The Introduction provides an overview of the county and describes the purpose of the Housing Element, housing element law, information requirements, and a summary of the community involvement and decision-making processes and techniques used.

2. Chapter 2: Housing Needs Analysis. The Housing Needs Analysis provides an overview of the County, including population and employment trends, household characteristics, and housing stock characteristics. The chapter describes the RHNA and discusses housing costs, household income, the ability to pay for housing, overcrowding, special housing needs,



households headed by one person, agricultural worker housing, needs for the homeless units at risk of conversion, and disadvantaged communities.

3. Chapter 3: Housing Constraints. This chapter discusses nongovernmental and governmental constraints to the development of housing, including nongovernmental constraints such as available vacant land, construction costs and financing, community resistance to new housing, and availability of infrastructure. Governmental constraints include regulatory standards that may present conflicts in land use objectives and create constraints to the production of housing, permit processing, and planning application review and fees.

4. Chapter 4: Resources. This chapter discusses land characteristics and breakdown of land in the county; development policy and objectives focusing residential development to the City-Centered Corridor; affordable housing in the county and the populations it serves; housing strategies for meeting RHNA and the process for identifying potential housing sites; local funding opportunities such as the Affordable Housing Trust Fund and the Restricted Affordable Housing Fund, among others; and opportunities for energy conservation such as the County's green building ordinance and programs offering free technical assistance or assistance to low income owners to rehabilitate older housing units for energy efficiency improvements.

5. Chapter 5: Goals, Policies, and Programs. This chapter contains the Housing Element Update policies and programs, some of which are new and others that are carried forward from the existing 2015 Housing Element, as discussed further below. These policies and programs describe the County's commitment to the actions necessary to address the current and future housing needs and reflect the major themes identified through the County's community outreach process and a critical evaluation of the programs and policies from the previous 2015 Housing Element (see the Housing Element Update Appendix B: Evaluation of 2015 Housing Element Programs). In addition, under AB 686, policies and programs must be examined under the lens of affirmatively furthering fair housing and a commitment to specific meaningful actions (see the Housing Element Update Appendix D: Affirmatively Furthering Fair Housing).

The following goals are included in the Housing Element Update. Goals 1 and 2 are the same as Goals 1 and 2 in the existing 2015-2023 Housing Element and have been carried forward to the Housing Element Update. Goal 3 is almost the same except for a minor revision noted with ~~strikeout~~ for deleted text. Goal 4 is a new policy proposed for this Housing Element Update and is indicated as such with underline for the new text.<sup>11</sup>

- Housing Goal 1: Use Land Efficiently

*Use Marin's land efficiently to meet housing needs and implement smart and sustainable development principles.*

(Same Goal 1 carried forward from 2015-2023 Housing Element)

- Housing Goal 2: Meet Housing Needs through a Variety of Housing Choices

*Respond to the broad range of housing needs in Marin County by supporting a mix of housing types, densities, affordability levels, and designs.*

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<sup>11</sup>The complete lists of Housing Element Update goals, policies, and programs are on pages 195 through 224 of the Housing Element Update and are included in Appendix B of this Draft EIR.

(Same Goal 2 carried forward from 2015-2023 Housing Element)

- Housing Goal 3: Ensure Leadership and Institutional Capacity

*Build and maintain local government institutional capacity and monitor accomplishments ~~so~~ as to respond to housing needs effectively over time.*

(Minor revision to Goal 3 carried forward from 2015-2023 Housing Element)

- Housing Goal 4: Combat Housing Discrimination, Eliminate Racial Bias, Undo Historic Patterns of Segregation

*Lift barriers that restrict access in order to foster inclusive communities and achieve racial equity, fair housing choice, and opportunity for all Californians.*

(New goal)

For each of these goals, the Housing Element Update states policies to guide action by decision making bodies (such as the Board of Supervisors), identifies implementing programs to be used to implement the policy, describes the specific actions and timeline, primary responsible departments, and funding sources for implementation of the individual programs, plus relevant housing policies for cross-referencing. For example, for Housing Goal 1 (use land efficiently), Policy 1.1 is to “Enact policies that encourage efficient use of land to foster a range of housing types in our community.” Policy 1.2 is to “Maintain an adequate inventory of residential and mixed-use sites to fully accommodate the County’s RHNA by income category throughout the planning period.” Implementing programs for Policy 1.1 include Program 1 to ensure adequate sites for RHNA and monitor development of sites for no net loss and Program 3 regarding replacement housing requirements, among others. The implementing program for Policy 1.2 is Program 1. For new Housing Goal 4 (combat housing discrimination, eliminate racial bias, undo historic patterns of segregation), all three policies are new: Policy 4.1 is to protect tenants from unlawful evictions and economic displacement, and promote greater education on tenants’ rights; Policy 4.2 is to educate the community about fair housing rights through proactive outreach; and Policy 4.3 is to ensure equal access to housing opportunities through County land use, development, and housing policies.

There are 11 new programs proposed in the Housing Element Update. Many of the remaining programs have been carried forward to continue the implementation of existing programs from the 2015 Housing Element. One program was not carried forward because it was completed. These 2015 Housing Element programs are discussed in Table B-1 of Housing Element Update Appendix B and identified below by their 2015 program number, as follows:

1. 2015 Program 1a. Establish Minimum Densities on Housing Element Sites.
2. 2015 Program 1b. Evaluate Multi-family Land Use Designations.
3. 2015 Program 1c. Evaluate the Housing Overlay Designation.
4. 2015 Program 1d. Study Ministerial Review for Affordable Housing.
5. 2015 Program 1e. Consider Adjustments to Second Unit Development Standards.
6. 2015 Program 1f. Review and Consider Updating Parking Standards.
7. 2015 Program 1g. Codify Affordable Housing Incentives Identified in the Community Development Element.
8. 2015 Program 1h. Promote Resource Conservation.

9. 2015 Program 1i. Consider Simplifying Review of Residential Development Project in Planned Districts.
10. 2015 Program 1j. Consider Adjusting Height Limits for Multi-family Residential Buildings.
11. 2015 Program 1k. Clarify Applicability of State Density Bonus.
12. 2015 Program 2a. Encourage Housing for Special Needs Households.
13. 2015 Program 2b. Enable Group Residential Care Facilities.
14. 2015 Program 2c. Make Provisions for Multi-Family Housing Amenities.
15. 2015 Program 2d. Foster Linkages to Health and Human Services Programs.
16. 2015 Program 2e. Support Efforts to House the Homeless.
17. 2015 Program 2f. Engage in a Countywide Effort to Address Homeless Needs.
18. 2015 Program 2g. Ensure Reasonable Accommodation.
19. 2015 Program 2h. Require Non-discrimination Clauses.
20. 2015 Program 2i. Increase Tenant Protections.
21. 2015 Program 2j. Promote the Development of Agricultural Worker Units in Agricultural Zones.
22. 2015 Program 2k. Promote and Ensure Equal Housing Opportunity.
23. 2015 Program 2l. Deter Housing Discrimination.
24. 2015 Program 2m. Implement the Inclusionary Housing Policy.
25. 2015 Program 2n. Apply Long-Term Housing Affordability Controls.
26. 2015 Program 2o. Encourage Land Acquisition and Land Banking.
27. 2015 Program 2p. Expedite Permit Processing of Affordable and Special Needs Housing Projects.
28. 2015 Program 2q. Study Best Practices for Housing Choice Voucher Acceptance.
29. 2015 Program 2r. Encourage First Time Homebuyer Programs.
30. 2015 Program 2s. Link Code Enforcement with Public Information Programs.
31. 2015 Program 2t. Assist in Maximizing Use of Rehabilitation Programs.
32. 2015 Program 2u. Monitor Rental Housing Stock.
33. 2015 Program 2v. Study Housing Needs and Constraints Specific to West Marin.
34. 2015 Program 3a. Consider methods for improving County's outreach with respect to affordable housing.
35. 2015 Program 3b. Advance Organizational Effectiveness.
36. 2015 Program 3c. Provide and Promote Opportunities for Community Participation in Housing Issues.
37. 2015 Program 3d. Coordinate with Regional Transportation and Housing Activities.
38. 2015 Program 3e. Coordinate with Other Agencies.

39. 2015 Program 3f. Promote Countywide Collaboration on Housing.

In addition, of the programs identified in the Housing Element Update, approximately half of the programs would potentially result in physical effects on the environment either because they promote construction of new housing or replacement of existing housing or because they could lead to construction through facilitation of housing development, which necessarily results in physical effects on the environment:

1. Program 1 – Adequate Sites for RHNA and Monitoring of No Net Loss.
2. Program 3 – Replacement Housing.
3. Program 4 – Accessory Dwelling Units.
4. Program 5 – SB 9 Mapping Tool.
5. Program 6 – Efficient Use of Multi-Unit Land.
6. Program 7 – Religious and Institutional Facility Housing Overlay.
7. Program 8 – Development Code Amendments.
8. Program 9 – Parking Standards.
9. Program 10 – Objective Development Standards for Off-Site Improvements.
10. Program 11 – Water Availability.
11. Program 12 – Septic for Multi-Unit Housing.
12. Program 15 – Housing for Farmworkers and Hospitality Workers.
13. Program 16 – Project Homekey.
14. Program 17 – Housing for Seniors.
15. Program 25 – Incentives for Affordable Housing.
16. Program 28 – Affordable Housing Funding Sources.

The other half of the programs either would not potentially result in a physical effect on the environment due to the type of activities proposed or the program is not subject to environmental review under CEQA, such as activities involving administrative or procedural changes, commitments to secure additional funding, and other actions that do not call for construction or otherwise directly involve physical effects on the environment:

1. Program 2 – By Right Approval.
2. Program 13 – Reasonable Accommodation.
3. Program 14 – Universal Design and Visitability.
4. Program 18 – Short-Term Rentals.
5. Program 19 – Vacant Home Tax.
6. Program 20 – Monitoring of Rental Housing.
7. Program 21 – Rehabilitation Assistance.
8. Program 22 – Habitability.
9. Program 23 – Preservation of At-Risk Housing.

10. Program 24 – Inclusionary Housing.
11. Program 26 – Below Market Rate Homeownership Program.
12. Program 27 – Community Land Trust.
13. Program 29 – Community Plans.
14. Program 30 – Fair Housing Outreach and Enforcement.
15. Program 31 – Tenant Protection Strategies.
16. Program 32 – Comprehensive Review of Zoning and Planning Policies.
17. Program 33 – Community Engagement.

### 3.4.3 Safety Element Update

A. Overview. The contents of a Safety Element are specified in Government Code §65304(g). A Safety Element contain goals, policies and implementation plans to prepare for and protect the public from the harmful impacts of environmental hazards. In Marin, the Safety Element is section 2.6 – Environmental Hazards of the Natural Systems and Agricultural Element of the CWP. Currently, the Safety Element addresses geologic, flooding, and wildfire hazards. It is being updated to comply with new state requirements to address climate change and resiliency planning, as well as new requirements to address sea level rise, flooding, and wildfire hazards.<sup>12</sup>

To support the update of the Safety Element, a Vulnerability Assessment<sup>13</sup> was prepared according to the California Adaptation Planning Guide (APG) which is a tool published by California Office of Emergency Services that local governments and organizations can use to integrate best practices into their adaptation planning efforts. The Vulnerability Assessment updated background information and mapping of each of the environmental hazards addressed in the Safety Element and identified the County’s most vulnerable populations. The findings of the Vulnerability Assessment were then used to update the Safety Element goals, policies, and implementation measures, especially as they relate to equitable community and safety planning, hazard recovery planning, wildfire hazard, sea level rise, and climate change and resilience planning. Efforts to streamline state and local planning include allowing a city to incorporate by reference the local hazard mitigation plan, the Community Wildfire Protection Plan, and other climate adaptation and resilience planning documents in a general plan. In addition, as allowed by State law and to reduce duplication, the County will incorporate information from the 2018 Local Hazard Mitigation Plan (LHMP) into the Safety Element Update. New information generated for the Safety Element Update will then be incorporated into the next update of the LHMP.

The Safety Element Update also was included in the community outreach program conducted for the Housing Element Update, discussed above in Section 3.4.2 and described in the Housing Element Update Appendix A.

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<sup>12</sup>SB 379, Gov Code §65304(g)(4), SB 99, Gov Code §65302(g)(5)

<sup>13</sup>Vulnerability Assessment, Marin Countywide Plan Safety Element, Final January 2022, [https://www.marincounty.org/-/media/files/departments/cd/he/marin-county-vulnerability-assessment\\_final\\_with-appendicies\\_reduced-20220117.pdf?la=en](https://www.marincounty.org/-/media/files/departments/cd/he/marin-county-vulnerability-assessment_final_with-appendicies_reduced-20220117.pdf?la=en), accessed 8/5/22.

The Safety Element Update has been presented for public review and comment and will be finalized after the following steps are completed: (1) Cal Fire has reviewed the Wildfire section; (2) the public comment period for this Environmental Impact Report (EIR) closes; and (3) the County responds to comments. When adopted by the County, the Safety Element will be incorporated into the CWP and will supersede the current CWP Section 2.6, Environmental Hazards and Safety of the Natural Systems and Agriculture Element.

B. Safety Element Update Description. The Safety Element Update includes the following areas:

1. Background. This section explains the context of the Safety Element in the CWP and how the Safety Element is intended to provide an understanding of the hazards that could threaten unincorporated Marin County and the practices and policies that will enable the continued prosperity and resilience of Marin County.

2. What is a Safety Element? This section explains how the Safety Element is one of the State-mandated elements of the CWP and presents goals, policies, and implementing programs to facilitate community resilience and reduce future loss from environmental hazards. This section also states State requirements to identify and discuss (a) equitable community safety planning; (b) disaster preparedness, response and recovery; (c) geology and seismicity; (d) flooding; (e) wildfire; and (f) climate change and resiliency planning.

3. Other Documents Incorporated by Reference. This section identifies two key documents relied on during preparation of the Safety Element: (a) the Marin County Multi-Jurisdictional Local Hazard Mitigation Plan; and (b) the Safety Element Vulnerability Assessment.

4. Additional Reference Documents. This section identifies the following other relevant documents: the Marin Community Wildfire Protection Plan (2020); the Marin Ocean Coast Sea Level Rise Adaptation Report (2018); and Adaptation Land Use Planning: Guidance for Marin County Local Governments (2019).

5. Marin County Hazards. This section discusses environmental hazards from geology and seismicity, flooding, wildfire, and climate change. The section also discussed related resilience planning; disaster preparedness, response, and recovery; and equitable community safety planning and vulnerable populations.

*a. Geology and Seismicity.* This section was previously included in the 2007 CWP and for this Safety Element Update includes updated information.

*b. Flooding.* This section was previously included in the 2007 CWP and for this Safety Element Update includes updated information.

*c. Wildfire.* This section was previously included in the 2007 CWP and for this Safety Element Update includes an expanded discussion updated information to meet new State requirements.

*d. Climate Change and Resiliency Planning.* This section provides an overview of the effects of climate change, such as changes in precipitation and weather, rising temperature and extreme heat days, and changes in sea level rise. The section discusses the sea-level rise scenarios the County has chosen to plan for, which exceed the State Agency Sea-Level Rise Action Plan for California minimums.

*e. Disaster Preparedness, Response, and Recovery.* This section discusses agencies involved in disaster preparedness and response, including the Sheriff's Office of Emergency Services. The section also discusses a community evacuation interface called ZoneHaven that will provide critical alerts and other information for residents throughout the county.

*f. Changing Regulatory Environment and Approach to Climate Planning.* This section describes the State's support for adaptation planning; the County's incorporation of climate adaptation and resilience considerations into the Safety Element Update, per Government Code § 65302(g) (SB 379); and steps needed to identify who and what are affected by climate-related disruptions to determine the vulnerability and adaptive capacity of people, places, and resources.

*g. Resiliency Planning.* This section identifies the need for proactive planning and discusses how resiliency planning differs from disaster recovery by creating a foundation to withstand or prevent loss of life, buildings and infrastructure, or services, while disaster recovery focuses on the restoration of operations after a hazard event.

*h. Climate Change in Marin.* This section expands the climate change discussion, including challenges from temperature increases and changes in precipitation patterns, and effects such as extreme heat events, extreme precipitation and flooding, landslides, wildfires, and sea-level rise.

*i. Sea Level Rise.* This section expands on the earlier discussion of the threat of sea level rise and describes the increased extent, depth, and frequency of coastal flooding; intrusion of salt water into groundwater, and into sanitary sewer, water, and storm drain pipelines; increased soil liquefaction risk during seismic events; and remobilizing of old soil contaminants.

*j. Wildfire Risk and Regulations.* This section discusses how the multi-agency Marin Wildfire Prevention Authority efforts to address wildland fire hazard in Marin County and satisfy CAL FIRE requirements, including an emphasis on new development or redevelopment after a fire; meeting fire safety standards; use of ecologically sound vegetation management for all development; and fuel reductions and vegetation management plans for new development.

*k. Equitable Community Safety Planning and Vulnerable Populations.* This section discusses climate resilience and community safety for all county residents, recognizing how other factors can contribute to the vulnerability of people and communities as analyzed in the Vulnerability Assessment for the Safety Element. This section describes how a comprehensive approach to climate justice is necessary for addressing existing inequities, exclusion, or institutionalized racism; poor environmental conditions, lack of access to services, or poor living conditions; individual or surrounding physical states or conditions that increase vulnerability; and lack of investment opportunities.

*l. Hazard Recovery Planning.* This section discusses current emergency planning to address threats or hazards, including long-term recovery planning to follow the immediate needs from an emergency or disaster.

6. Safety Element Update Goals. The following goals are included in the Safety Element Update with revisions noted with ~~strikeout~~ for deleted text and underline for new text. Goal EHS-1 and Goal EHS-6 are new goals. Goal EHS-2, Goal EHS-3, Goal EHS-4, and Goal EHS-5 are revised goals incorporating existing 2007 CWP Goal EHS-1, Goal EHS-2, Goal EHS-3, and Goal EHS-4, respectively.<sup>14</sup>:

- Goal EHS 1: Equitable Community Safety Planning  
Create equitable processes for executing climate resilience and community safety policies, where justice is central to policy design and implementation.
- Goal EHS-2: Disaster Preparedness, Response and Recovery  
Support continuing public awareness of hazards, including avoidance, disaster preparedness, and emergency response procedures. Ensure readiness in and after emergency situations and create an effective evacuation route network.
- Goal EHS-23: Safety from Geologic and Seismic Hazards  
~~Protect people and property from risks associated with seismic activity and geologic conditions.~~ Minimize the loss of life, injury, and property damage due to seismic and related geological hazards.
- Goal EHS-34 Safety from Flooding and Inundation  
Protect people, and property from risks associated with flooding. (Also see the Public Facilities and Water Resources sections.) Minimize the loss of life, injury, and property damage due to flooding hazards.
- Goal EHS-5: Safety From Fires Wildfire  
Protect people and property from hazards associated with wildland and structure fires.
- Goal EHS-6: Resilience to Climate Change  
Manage the threat of climate risks to the current and future Marin community.

For each of these goals, the Safety Element Update states policies to guide action by decision making bodies (such as the Board of Supervisors), identifies programs to be used to implement the policy, and describes the responsibilities, potential funding priorities, and estimated time frames, dependent upon the availability of adequate funding and staff resources. For example, for Goal EHS-1 – Equitable Community Safety Planning, Policy EHS-1.1 is “Safety Planning for Everyone,” which calls for prioritizing involvement of vulnerable communities, identified in the Marin County Climate Change Vulnerability Assessment, in community safety planning and reduce the exposure to, increase preparedness for, and reduce recovery times from natural and human-caused safety risks for vulnerable communities and all populations and communities in Marin County. Policy EHS-1.2 is “Community-Led Safety Programs,” which calls for putting community organizations and civic leaders at the forefront of the community safety planning process. Implementing programs under these policies include Program EHS-1.1.a, to develop a vulnerable communities database, and Program EHS-1.1.b, which calls for develop an outreach program for vulnerable populations.

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<sup>14</sup>The complete lists of Safety Element Update goals, policies, and programs are on pages 29 through 74 of the Safety Element Update and are included in Appendix B of this Draft EIR.



There are 68 new programs proposed in the Safety Element Update, and 28 revised programs and 17 renumbered programs from the existing CWP. Most of the programs would not result in a potential physical effect on the environment due to the type of activities proposed.

For example, Program EHS-1.1.a – Develop a Vulnerable Communities Database, which calls for creating a database for a number of planning and resiliency initiatives, and Program EHS-2.1.a – Distribute Maps, which calls for making evacuation route maps available to the public, do not call for construction or otherwise involve physical effects on the environment. Similarly, other programs such as Program EHS-3.3.a – Avoid Known Landslides Areas or Program EHS-4.1.e – Restrict Development in Flood Prone Areas to Minimize Inundation are designed to support future development in avoiding potential environmental hazards; however, these programs also do not call for construction or otherwise involve physical effects on the environment.

The remaining programs are likely to result in physical effects on the environment because their activities, such as road improvements, creating or improving evacuation routes, and similar efforts to reduce or eliminate risk from hazardous conditions, require construction or because they facilitate construction, which necessarily involves physical effects on the environment. For example, Program EHS-2.4.d – Create New Evacuation Routes calls for identifying and constructing additional local evacuation routes in high hazard areas or areas with limited mobility, which would result in physical effects on the environment. Other programs that would result in physical effects on the environment are also intended to provide protection for residents and property, such as Program EHS-5.5.c – Develop and Maintain Fuel Breaks and Vegetation on Access Routes, which calls for constructing and maintaining ecologically sound fuel breaks and managing vegetation along emergency access routes.

### **3.5 ADMINISTRATIVE ACTIONS**

Marin County is the lead agency for the proposed Project. A lead agency, as defined in Section 15367 of the State CEQA Guidelines, is “the public agency that has the principal responsibility for carrying out or approving a project.”

The Housing and Safety Elements Update project will be considered by the Marin County Board of Supervisors for adoption. As the Lead Agency, the County also intends this EIR to serve as the CEQA-required environmental documentation for consideration by Responsible Agencies and Trustee Agencies that may have discretionary authority over future projects affected by the Housing and Safety Elements Update (such as the California Coastal Commission,<sup>15</sup> California Department of Fish and Wildlife, California Department of Transportation, Regional Water Quality Control Board, Bay Area Air Quality Management District, San Francisco Bay Conservation and Development Commission, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and U.S. Army Corps of Engineers,). The Marin County Planning Commission will make a recommendation regarding Final EIR certification to the Board of Supervisors prior to the Board of Supervisors’ action on the Final EIR and on the proposed Housing and Safety Elements Update. Following Marin County approval, the County will provide the State Department of Housing and Community Development (HCD) the Housing Element Update for review and certification.

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<sup>15</sup>Proposed rezonings in the coastal zone and some of the proposed code changes will require CCC approval and possibly updates to the Local Coastal Program (LCP).

### **Actions Covered by this EIR**

In addition to adoption of the Housing and Safety Elements Update project, this Draft EIR contemplates the following actions as implementing programs and activities. These approvals will be considered and made solely by the Marin County Board of Supervisors and are the following:

- The 2007 Countywide Plan will be amended to incorporate the updates to the Housing and Safety Elements.
- Changes to the CWP and Zoning Code as necessary to Implement “Programs” identified in the Housing Element. Such amendments may include the following:
  - Changes to the land use designations (where needed) to accommodate the development intensity needed to satisfy the RHNA;
  - Changes to policies and programs to remove barriers to residential development (adjustment to the City-Center/Inland Rural boundaries, modify policies related to density limitations, modify text to clarify the relationship between the CWP and community plans, replace the Housing Overlay District with a Housing Element Overlay, etc.);
  - Changes to the zoning map land use designations (where needed) to accommodate the development intensity needed to satisfy the RHNA; and
  - Zoning text amendments to ensure procedures and standards are in place to support development needed to satisfy the RHNA in compliance with State Law (Objective Development Standards).

### **Related Marin County Development Code Update**

The Project includes programs with amendments to the Development Code to be enacted after adoption of the Housing and Safety Elements Update project; however, this EIR contemplates these actions as implementing programs and activities of the Project. The purpose of the amendments is to make the Development Code consistent with the goals, policies, and programs of the Project. Development Code amendments necessary to implement these programs will be adopted for the “Project Sites,” to implement the Housing and Safety Elements, and as necessary to meet the RHNA. Code changes may include the following:

- Complete redesignation/rezoning for adequate sites to fully accommodate the RHNA.
- Amend the CWP to adjust the Inland Rural/City-Center corridor boundary.
- Update the Development Code to address the by-right approval requirements.
- Amend the Development Code to establish minimum densities for multi-unit and mixed-use zones.
- Allow at least 50 percent of the floor area as residential use on mixed use development sites.
- Amend the Development Code to increase the height limit from 30 feet to 45 feet.
- Amend the Accessory Dwelling Units regulations to be consistent with State law.
- Amend agricultural worker provisions in the Development Code to be consistent with the State Employee Housing Act.

- Revise the Development Code to permit or conditionally permit large residential care facilities in all zones that permit residential uses, as similar uses in the same zone, and ensure the required conditions for large facilities are objective to provide certainty in outcomes.
- The County will change the code to comply with state laws related to supportive housing, emergency shelters, and Low Barrier Navigation Centers.
- Amend the Code to reduce parking requirements for multi-unit housing, and to revise parking requirements for supportive housing meeting certain criteria and emergency shelters.

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## 4. AESTHETICS

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Aesthetics.</b> <i>Except as provided in Public Resources Code Section 21099, would the project:</i>				
a) <i>Have a substantial adverse effect on a scenic vista?</i>	X			
b) <i>Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?</i>				X
c) <i>In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?</i>	X			
d) <i>Create a new source of substantial light or glare which would adversely affect day or nighttime views in the Project Area?</i>			X	

This EIR chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, discusses Project goals, policies, and implementation programs that would avoid or reduce those potential impacts, and identifies mitigation measures as needed to reduce significant impacts.

### 4.1 ENVIRONMENTAL SETTING

Marin County is located north of the City and County of San Francisco, in the northwestern part of the San Francisco Bay Area, with Sonoma County to the north and east, San Francisco Bay to the southeast, and the Pacific Ocean to the west. Prominent visual features visible from the County include the Golden Gate Bridge and San Francisco to the south; Angel Island, Alcatraz Island, the San Francisco-Oakland Bay Bridge to the east; and Drake’s Bay and the Pacific Ocean to the west.

#### 4.1.1 Visual Character of the Project Planning Area

A. General Visual Character. North-south running ridges and valleys define the basic topographic structure of the County. The northern and eastern parts of the County contain flatter areas. As noted in the 2007 Countywide Plan, four separate environmental corridors illustrate

<sup>1</sup>State CEQA Guidelines, Appendix G, item I (a through d).

the geographic and environmental characteristics and natural boundaries formed by these north-south running ridges.<sup>2</sup>

The far eastern part of the County (the Baylands Corridor) contains lands that were once part of the bays and are now tidelands, marshes, and diked lands. In addition, there are upland areas with little development. The incorporated cities and towns in the County are also in the eastern part (the City-Centered Corridor adjacent to the Baylands Corridor), generally following U.S. 101 but also extending westward. The City-Centered Corridor is home to nearly 96 percent of the County's population. The area in the central part of the County (Inland-Rural Corridor) contains ranches and farms with low densities, typical of the largely rural character of the County, though there are communities in valleys such as San Geronimo Valley and Nicasio Valley. Other small communities in the western part of the County (the Coastal Corridor) include Tomales, Inverness, Point Reyes Station, Olema, Dillion Beach, Stinson Beach, Muir Beach, and Bolinas, in addition to land designated for agriculture, federal parklands, and other recreational areas.<sup>3</sup>

The County contains many parks and open space areas, including federal parks (the Point Reyes National Seashore, Golden Gate National Recreation Area, and the Muir Woods National Monument), state parks (Mt. Tamalpais State Park, Olompali State Park, Samuel P. Taylor State Park, and Tomales Bay State Park among others); land under the authority of the Marin Municipal Water District; and other lands managed by the County, some cities and towns in the County, and other public agencies.<sup>4</sup> Nearly half of the land base is protected by park or open space status. These protected lands preserve natural and open space resources that contribute to the overall spacious quality of the County outside of the developed eastern part. In addition, agricultural lands serve as separators between communities, such as San Rafael and Novato, with their visual open landscapes and green space.<sup>5</sup>

Two major transportation corridors generally run north-south through the County: U.S. Hwy 101 in the east, which serves as a main conduit for the developed cities and towns in the east; and State Route (SR) 1 in the west, which provides a similar function though in a less-developed part of the County. SR 1 eventually merges with U.S 101 in the east near Marin City. Two other highways – Interstate 580 (I-580) and SR 37 – connect the County to neighboring areas in the northeast.

**B. Prominent Features.** The most dominant natural landform in the County is Mt. Tamalpais State Park. Other summits and associated ridgelines include Bolinas Ridge, Pine Mountain and Pine Mountain Ridge in the west; Loma Alta Preserve, Mount Burdell, and Big Rock Ridge in the east. Most of the ridge and upland greenbelt areas are located in the eastern County, from Olompali State Historic Park and Mount Burdell Preserve in the north down to Oakwood Valley and Wolfback Ridge in the south, with some areas extending toward San Pablo Bay around San

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<sup>2</sup>Marin Countywide Plan, "Geology, Mineral Resources and Hazardous Materials Technical Background Report," updated November 2005, p. 5; Marin Countywide Plan, November 6, 2007, p. 1.1-2.

<sup>3</sup>County of Marin, Marin GeoHub, <https://gisopendata.marincounty.org/datasets/MarinCounty::countywide-plan-environmental-corridor/explore?location=38.003280%2C-122.811829%2C10.00>, accessed 5/15/22; County of Marin Community Development Agency, Marin County Housing Element 2015 – 2023, March 20, 2015, p. IV-1.

<sup>4</sup>Marin County, Public Lands, <https://data.marincounty.org/stories/s/Public-Lands-in-Marin/7b6n-tzji/>, accessed 5/15/22.

<sup>5</sup>County of Marin Community Development Agency, Marin Countywide Update EIR, January 2007, p. 4.12-1 and 4.12-2.

Pedro Mountain, San Quentin Ridge, and the Tiburon Peninsula. These visually prominent ridge and upland areas are protected by Countywide Plan policies that minimize development potential, with restrictions to ensure development is situated well below the ridgeline. The western County includes Inverness Ridge and Bolinas Ridge, located respectively in the Point Reyes National Seashore and Golden Gate National Recreation Area. Ridgelines and viewsheds not otherwise under Federal or State jurisdiction are protected by County and local ordinances.<sup>6</sup>

**C. Candidate Housing Sites.** As discussed in Chapter 3, Project Description, the Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Section 3.4.2(c) in Chapter 3, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of “candidate housing sites,” which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts.

These sites are generally located along the west side of the county, from Tomales down to Stinson Beach; along the east side from the Novato area down to Marin City; around Nicasio; in the Lucas Valley-Marinwood area; and in the Lagunitas-Forest Knolls/San Geronimo/Woodacre area. Many of the proposed sites are in the flatter valley areas and where development is already located.

#### **4.1.2 Existing Scenic Vistas**

Existing vistas in the Coastal Corridor include a variety of landscape settings, such as pastoral and rural areas, Tomales Bay, beaches and coastal bluffs, Inverness Ridge, and the Pacific Ocean, especially from SR 1 in elevated areas and also along trails, particularly near the coast. The Rural Inland Corridor contains the majority of agricultural lands in the County, with a variety of vistas opening up to rolling hills with grassland fields. Other public views are often blocked by woodland areas, which offer their own proximate scenic values. In the City-Centered Corridor, vistas are often obstructed by the extensive development along and adjacent to U.S. 101, although along part of U.S. 101 in the north views of Mt. Burdell are available. Along south U.S. 101 are views of Mt. Tamalpais and Tamalpais State Park, and after exiting the Robin Williams Tunnel southbound are views of San Francisco and the Golden Gate Bridge.

#### **4.1.3 Existing Scenic Highways**

There are no officially designated State scenic highways within the County.<sup>7</sup>

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<sup>6</sup>County of Marin, Marin GeoHub, <https://gisopendata.marincounty.org/datasets/MarinCounty::ridge-and-upland-greenbelt/explore?location=38.098443%2C-122.594849%2C10.00>, accessed 5/15/22; County of Marin Community Development Agency, Marin Countywide Update Draft EIR, January 2007, p. 4.12-3.

<sup>7</sup>State of California, Caltrans, Scenic Highways, Scenic Highway System Lists and California State Scenic Highway System Map, <https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways>, accessed 4/13/22.

#### 4.1.4 Existing Light and Glare

Existing sources of nighttime light include those common to developed areas or areas through which traffic travels regularly (e.g., street lights, parking lot lighting, building lighting, illuminated signs, vehicle headlamps, interior building lighting visible through windows). Existing sources of glare include reflection of sunlight and artificial light off windows, buildings, and other surfaces in the day, and glare from inadequately shielded or improperly directed light sources at night. Nighttime light sources in areas with less intense development and lower population density, such as rural areas in the west and inner-rural areas, are typically sparser than in more developed or more highly populated areas, such as urban areas in the east, especially along the U.S. 101 corridor. Therefore, sources of nighttime light in the County would generally be expected to diminish from east to west.

### 4.2 REGULATORY SETTING

#### 4.2.1 State Regulations and Laws

**California Solar Shade Control Act.** Under the California Solar Shade Control Act (Public Resource Code Sections 25980-25986), no property owner shall allow a tree or shrub to be placed or to grow so as to cast a shadow greater than 10 percent at any one time between the hours of 10:00 AM and 2:00 PM over an existing solar collector used for water heating, space heating or cooling, or power generation on an adjacent property. These limitations apply to the placement of new trees or shrubs, and do not apply to trees and shrubs that already cast a shadow upon that solar collector. The location of a new solar collector is required to comply with local building and setback regulations but must be set back not less than five feet from the property line and must be no less than 10 feet above the ground.<sup>8</sup>

**Title 24 Outdoor Lighting Zones.** The Building Energy Efficient Standards (California Building Standards Code, California Code of Regulations, Title 24, Part 6, California Energy Code) specify outdoor lighting requirements for residential and non-residential development. The intent of these standards is to improve the quality of outdoor lighting and help reduce the impacts of light pollution, light trespass, and glare. The standards regulate lighting characteristics, such as maximum power and brightness, shielding, and sensor controls to turn lighting on and off. Different lighting standards are set by classifying areas by lighting zone. The classification is based on U.S. Census Bureau population figures, and the areas can be designated as LZ0 (very low), LZ1 (low), LZ2 (moderate), LZ3 (moderately high), or LZ4 (high). Lighting requirements for dark and rural areas are stricter in order to protect the areas from new sources of light pollution and light trespass. According to the U.S. Census Bureau, portions of the eastern County are defined as urban areas or urban clusters and are therefore designated as Lighting Zone 4 per the California Energy Commission outdoor lighting zone classification standards.<sup>9</sup>

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<sup>8</sup>California Codes, Public Resource Code Sections 25980-25986 ([https://leginfo.ca.gov/faces/codes\\_displayText.xhtml?lawCode=PRC&division=15.&title=&part=&chapter=12.&article=](https://leginfo.ca.gov/faces/codes_displayText.xhtml?lawCode=PRC&division=15.&title=&part=&chapter=12.&article=)).

<sup>9</sup>The Census Bureau defines rural as any population, housing, or territory not in an urban area. (U.S. Census Bureau, <https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html>, accessed 4/6/22.)



#### 4.2.2 Local Regulations

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses aesthetic issues. Applicable adopted Countywide Plan policies include:

##### **Natural Systems and Agriculture Element – Open Space policies**

- Policy OS-1.2: Protect Open Space for Future Generations. Ensure that protected lands remain protected in perpetuity, and that adequate funding is available to maintain it for the benefit of residents, visitors, wildlife, and the environment.
- Policy OS-2.2: Continue to acquire or otherwise preserve additional open space countywide. Targeted greenbelts and community separators in the Baylands and City-Centered corridors include the following:
  - Wolfback Ridge to Tennessee Valley, west of Highway 101, around to Oakwood Valley, preserves Marin’s southern gateway. It connects the Golden Gate National Recreation Area (GGNRA) with Sausalito and Marin City. Most of this area has been acquired as part of the GGNRA.
  - Ridge above Tamalpais Valley, along Panoramic from Tennessee Valley westward, includes trail links with Mount Tamalpais State Park. Portions are included in the GGNRA.
  - Tiburon Peninsula Ridge includes trails to several points along the bay. The Open Space District and the Town of Tiburon have acquired portions of this ridge.
  - Northridge is one of the most important community separators in Marin, connecting Mill Valley, Corte Madera, and Larkspur with the Marin Municipal Water District lands to the west. Most of the ridge has been acquired through the joint efforts of the Open Space District, cities and towns, and nongovernmental organizations.
  - The rim of the Corte Madera Creek Watershed connects the Upper Ross Valley communities with the Marin Municipal Water District lands to the west. Most of the ridge has been acquired through the joint efforts of the Open Space District, cities and towns, and nongovernmental organizations.
  - Southern Heights Ridge, dividing San Rafael and the Ross Valley.
  - San Pedro Peninsula Hills provides a backdrop for the Civic Center and offers panoramic views of the bay region. Most of this ridge has been acquired by the State, the Open Space District, and the City of San Rafael.
  - Terra Linda-Sleepy Hollow Divide. Substantial portions have been acquired by the Open Space District and the City of Novato.
  - Big Rock Ridge separates the Novato basin from the Lucas Valley-Marinwood communities, extends to Stafford Lake Park, and borders the College of Marin-Indian Valley campus. Portions have been acquired by the Open Space District, the County, the City of Novato, and the Marinwood Community Services District.

- Hills east of Highway 101 near St. Vincent's School provide a continuous greenbelt system between Big Rock Ridge and San Pablo Bay. This space separates Novato from San Rafael.
- Pinheiro Ridge functions as a ridge and upland greenbelt/community separator between the Atherton community and the lands including and surrounding Gness Field.
- Mount Burdell is the major landmark of North Marin. This preserve is a major component of a proposed greenbelt extending from the Rush Creek wetlands to Stafford Lake. Existing protected lands on Mount Burdell are the Open Space District's 1600-acre Mount Burdell Open Space Preserve and Olompali State Historic Park. Lands on the northern and eastern slopes of Mount Burdell to the county line serve as an agricultural and open space buffer and gateway between Marin and Sonoma counties.
- Policy OS-2.4: Support Open Space Efforts Along Streams. Support efforts to restore, enhance, and maintain natural vegetation and other habitat values along streams in the Baylands and City-Centered corridors. Maintain strict controls and high environmental standards in these zones. Targeted streams and creeks in the Baylands and City-Centered corridors include the following:
  - Mill Valley Area creeks. Local jurisdictions should provide adjacent parks and regulate development to protect streamside vegetation along Arroyo Corte Madera del Presidio, Old Mill, Cascade, Homestead, and Coyote creeks.
  - Corte Madera Creek. Although much of this creek has already been lined with concrete, a landscaped bicycle path now extends from the Larkspur Ferry Terminal through the lower Ross Valley. The California clapper rail inhabits marshes along this creek.
  - Miller Creek from Highway 101 to Big Rock should provide a continuous natural strip through Marinwood and Lucas Valley to the bay. The Marinwood Community Services District, the Open Space District, and the City of San Rafael have acquired a substantial portion of the land targeted for acquisition along Miller Creek.
  - Novato and Warner Creeks, among the few remaining natural streams in east Marin, should be protected as far to the west as possible.
- Policy OS-2.5: Support Open Space Efforts in the Inland Rural Corridor. Targeted lands in the Inland Rural Corridor include the following:
  - Marin Municipal Water District lands. This area includes lands around Kent Lake and the Carson Creek drainage.
  - An area north of Samuel P. Taylor State Park including Devil's Gulch has been acquired by the federal government as part of a continuous park strip from the Golden Gate.
  - The Nicasio Reservoir area.
  - The Stafford Lake vicinity. Includes the lake owned by the North Marin Water District and the adjacent Stafford Lake County Park.
  - Ridgeland defining the San Geronimo Valley. Includes Pine Mountain Ridge westward from White Hill, and the lands between Loma Alta and Samuel P. Taylor

State Park. The Open Space District has acquired substantial acreage here in the past decade.

### **Built Environment Element – Community Development policies**

- Policy CD-1.1: Direct Land Uses to Appropriate Areas. Concentrate urban development in the City-Centered Corridor, where infrastructure and facilities can be made available most efficiently. Protect sensitive lands in the Baylands Corridor. Emphasize agricultural uses in the Inland Rural Corridor, along with preservation of resources, habitat, and existing communities. Focus on open space, recreational, and agricultural land uses, as well as preservation of existing communities, in the Coastal Corridor.

### **Built Environment Element – Community Design policies**

- Policy DES-1.1: Address Design at the Community Level. Use community plans to regulate building design and protect key resources. Encourage cities and towns to address design issues.
- Policy DES-1.2: Protect Rural Character. Ensure that development in rural areas is consistent with local design and scale and does not detract from the open character of the landscape.
- Policy DES-1.3: Encourage Sustainable Urban Forestry. Promote the use of sustainable urban forestry practices addressing long-term forest management, public education, and outreach.
- Policy DES-1.4: Plan Complementary Transition Areas. When planning areas between cities, towns, and unincorporated rural communities, ensure that development provides for a harmonious transition to complement the design characteristics of both areas.
- Policy DES-3.1: Promote Infill. Encourage the development of vacant and underutilized parcels consistent with neighborhood character.
- Policy DES-3.2: Promote Green Spaces. Encourage the creation of high-quality community plazas, squares, greens, commons, community and neighborhood parks, and rooftop gardens.
- Policy DES-4.1: Preserve Visual Quality. Protect scenic quality and views of the natural environment — including ridgelines and upland greenbelts, hillsides, water, and trees — from adverse impacts related to development.

### **Built Environment Element – Planning Areas policies (these policies pertain specifically to the St. Vincent's and Silveira Planning Area)**

- Policy SV-1.4: Maintain the Miller Creek Corridor. Consistent with streamside conservation policies in the Natural Systems and Agriculture Element, maintain the Miller Creek corridor east of Highway 101 as an open channel and enhance the creek. Require minimum setbacks of 100 feet from the top of each bank. Protect Miller Creek as the centerpiece of the watershed and an important natural habitat area.
- Policy SV-1.5: Protect the Silveira Corridor. Protect the Silveira Corridor on the Silveira ranch to provide for scenic vistas and to retain the natural ecological connections among grasslands, valley oaks, the Miller Creek riparian corridor, and diked tideland habitats.

- Policy SV-1.11: Protect Ridge and Upland Greenbelt Lands. Ensure that land use in areas shown as Ridge and Upland Greenbelt is consistent with Ridge and Upland Greenbelt policies. Maintain Pacheco Ridge in its natural state as a community separator and a habitat resource. Maintain connections between oak woodlands on Pacheco Ridge and the Miller Creek riparian community and bayland habitats.
- Policy SV-3.1: Ensure Sensitivity of Development. Ensure that development is sensitive to the character of the land. Retain the existing natural topography to the greatest extent possible. Keep cut and fill to a minimum.
- Policy SV-3.2: Protect Existing Views. Development shall not negatively impact existing views of Pacheco Ridge, the Chapel, the bucolic setting, and the bay as seen from Highway 101. The properties shall continue to function as a visual buffer separating the cities of San Rafael and Novato.

**Built Environment Element – Planning Areas policies (these policies pertain specifically to the West Marin Planning Area)**

- Policy PA-7.3: Maintain Village Character. To maintain the character, heritage, and identity of the villages in West Marin, a community plan for each community shall be adopted. As needed, community plans shall be periodically revised.
- Policy PA-7.5: Avoid Large-Scale Development. Large-scale development within villages that would rapidly or drastically change the character of the village or require expensive new urban services should be discouraged, but social and economic diversity should be encouraged. The expansion of public utilities should be coordinated with Plan policies.
- Policy PA-7.6: Encourage Diversity in Lot Size and Architecture. Diversity in lot size and architecture should be encouraged.

**Marin County Code.** As stated in County Code chapter 24.03.020 (Design standards), all plans submitted for review shall be prepared by a professional and shall generally be in accordance with the County’s design standards, as set forth in Title 24, “Development Standards.” Article III (Site Planning and General Development Regulations) includes design standards related to fencing and screening, height limits and exceptions, hillside development, and setback requirements and exceptions. Chapter 22.42 (Design review) describes the process for proposed discretionary development required to undergo design review in the unincorporated areas of the County; more specifically, Section 22.42.060(A) requires compliance with Multi-family Residential Design Guidelines, as applicable. Chapter 22.16 (Discretionary Development Standards) includes general standards pertaining to exterior lighting, in particular section 22.16.030(G), which states: “Exterior lighting visible from off-site should be allowed for safety purposes only, shall consist of low-wattage fixtures, and should be directed downward and shielded to prevent adverse lighting impacts on nearby properties, subject to the approval of the Director.” Also, for projects located within the coastal zone (defined by the Coastal Act of 1976) that are subject to a coastal development permit, the standards set forth in Article V – Coastal Zones – Development and Resource Management Standards are applicable.

**Marin County Local Coastal Plan Land Use Plan.** The Marin County Local Coastal Land Use Plan (2018) governs land development in the Marin County Coastal Zone and includes policies pertaining to agriculture, biological resources, environmental hazards, mariculture, water resources, community design, community development, energy, housing, public facilities and

services, and transportation for the communities in the coastal zone (i.e., Muir Beach, Stinson Beach, Bolinas, Olema, Point Reyes Station, Inverness, East Shore, Tomales, Dillon Beach).

**Community and Area Plans.** There are 26 Community Plans that contain policies for land use and development related specifically to particular local areas within Marin County, such as the Black Point Community Plan, Bolinas Community Plan, Marin City Community Plan, and Santa Venetia Community Plan, among others. These policies have been designed to reflect the character of local communities for use in evaluating discretionary planning applications.

### 4.3 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to aesthetic and visual resources that could result from the Project and discusses Project policies and actions that would avoid or reduce those potential impacts.

#### 4.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to aesthetics and visual resources if it would:

- A. Have a substantial adverse effect on a scenic vista;
- B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;
- C. Substantially degrade the existing visual character or quality of public views of the site and its surroundings (public views are those experienced from publicly accessible vantage point); If the project is in an urbanized area and would conflict with applicable zoning and other regulations governing scenic quality; or
- (d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the Plan Area.

Criterion (b) regarding State scenic highways does not apply to the Project because as discussed above in 4.1.3, Existing Scenic Highways, there are no designated State scenic highways in Marin County, and therefore this topic is not discussed further.

#### 4.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

Section 4.2 (Regulatory Setting), above, applies to implementation of the Project. Neither the Housing Element Update nor the Safety Element Update contain policies or implementing programs that directly address CEQA-defined aesthetics impacts.

#### 4.3.3 Impacts and Mitigation Measures

The Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Chapter 3, Project Description, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of “candidate housing sites,” which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider

alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts.

This aesthetics evaluation applies to the Candidate Housing Sites and is provided at a programmatic level consistent with the level of detail of the proposed Project.

**Impact 4-1: Effects on Scenic Vistas.** *[Threshold of Significance (a)]* Potential housing facilitated by the Housing Element Update would include development on vacant sites and also replacing existing developed areas with new development, which could substantially adversely affect a scenic vista due to changes in densities and building heights that could potentially obscure or degrade scenic vistas and substantially adversely affect a scenic vista. This would be a **significant impact**.

Public vantage points of prominent vistas are typically located along roads and trails/paths in the elevated areas of the County, such as hilly sections of SR 1, ridgelines, and other upland areas. These are protected by County and local ordinances, or they are under jurisdiction of Federal or State agencies. Other areas with public vantage points include flatter or valley areas that sometimes provide views of rolling hills and grassland fields; however, these public views can be limited by existing structures or woodland areas. In some of the less developed areas, existing development occurs at lower densities, which allows for unfettered views across open areas and promotes the pastoral setting of many areas.

Potential housing facilitated by the Housing Element Update would include development on vacant sites and also replacing existing developed areas with new development, which could affect a scenic vista by interrupting or blocking views, or creating densities that detract from and degrade the scenic vista.

*Discretionary Projects.* Discretionary project proposals would be required to comply with County Code Chapter 22.16 – Discretionary Development Standards, which includes general standards pertaining to site planning, building location, and other development requirements, and County Code Chapter 22.42 – Design Review, which requires that the site layout and design of new developments ensure that structures “...will not eliminate primary views and vistas; and will not eliminate privacy enjoyed on adjacent properties.” In addition, project compliance with the Multi-family Residential Design Guidelines would be required by County Code Section 22.42.060(A), thereby reducing the potential that development would disrupt views from existing public viewpoints. Although the design review process and compliance with design guidelines would generally ensure that project effects on scenic vistas would not be severe, any conclusions regarding effects on scenic vistas would be speculative without specific project designs, and therefore this would be a *potentially significant impact*. Development activities facilitated by the Safety Element Update, which would include possible construction of road improvements, creation of new evacuation routes or improvement of deficient routes and other access provisions, and possible retrofitting of County Buildings and critical facilities, would have minimal effects on scenic vistas.

*Ministerial Projects.* Ministerial projects, such as homeless shelters, large family day-care projects, and residential accessory dwelling units (ADUs)<sup>10</sup> and junior ADUs, would not generally be subject to County design review or CEQA review. These projects could have adverse effects on scenic vistas, although as noted above, conclusions regarding their effects on scenic vistas would be speculative without specific project designs.

*Streamlining.* Similarly, development proposals that meet certain State-established categories would be exempt from CEQA review, referred to as streamlining. For instance, potential future housing development facilitated by the Housing Element Update qualifying for streamlined review under SB 35 (Government Code Section 65913.4) would be subject only to objective design standards and other objective planning standards; no public hearing or CEQA review is allowed. However, the objective design standards need to be adopted at the time a proposal is submitted under SB 35. Currently, the County is working to adopt objective design standards. Objective design standards typically involve no personal or subjective judgment by a public official, and would include external and uniform benchmarks or criteria available and knowable by both the development applicant and the public official prior to submittal. The standards would address local architectural styles, building patterns, and historic areas, thereby supporting design of new projects that would be consistent with the existing community and so would reduce adverse aesthetic effects. Without applicable objective design standards, any conclusions regarding potential reduction of project effects on scenic vistas would be speculative, and therefore this is would be a *potentially significant impact*.

Development proposed under SB 9 (Government Code Sections 66452.6, 65852.21, and 66411.7) provides for ministerial approval of a housing development of no more than two units in a single-family zone (duplex) or the subdivision of a parcel zoned for residential use into two parcels (lot split), or both, without discretionary review. Objective design standards may be applied as long as they allow up to two primary units on the subject parcel or, in the case of a lot split, up to two primary units on each of the resulting parcels, and allow each primary unit to be at least 800 square feet in size. As with SB 35, any conclusions regarding potential reduction of project effects on scenic vistas would be speculative without the final adopted objective design standards, and therefore this would be a *potentially significant impact*.

*CEQA Exemptions.* Other potential future housing development facilitated by the Housing Element Update could qualify for certain categories of CEQA exemptions that would make a project exempt from CEQA review, generally including exemption from aesthetics review, though some exceptions would apply. Such projects would not necessarily be exempt from County design review requirements because they would not necessarily be considered ministerial; if determined to be discretionary, such projects would be subject to County Code Chapter 22.42 – Design Review as described above, including potential for similar project effects on scenic vistas.

Although objective design standards are likely to be adopted by the time a housing development application is submitted that would apply to the project, it is unknown whether or not these standards, which would rely on uniform benchmarks or criteria, would minimize project effects on a scenic vista sufficiently to reduce project effects on scenic vistas to less-than-significant

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<sup>10</sup>Category 4 ADUs are subject to any discretionary review that would normally be required for the development, including Coastal Permits, Design Reviews, and Variances, and would also require an ADU Permit.

because the benchmarks or criteria may not provide uniformly effective reduction of potential impacts on scenic vistas due to individual project characteristics, design features, site layout, and, to a lesser extent, building heights and massing. In addition, with respect to discretionary projects, the effectiveness of County design review would also be speculative without knowledge of the site design and building scale and location. Therefore, because neither the County's design review process nor use of objective design standards, when adopted, may be adequate to reduce project effects on scenic vistas to a less-than-significant level, and no additional feasible mitigation is available for ministerial and streamlined projects, this impact would be **significant and unavoidable**.

**Mitigation.** No feasible mitigation is available. This impact would remain **significant and unavoidable**.

**Impact 4-2: Impacts on Existing Visual Character and Quality.** *[Threshold of Significance (c)]* Potential housing facilitated by the Housing Element Update, including development on vacant sites and also replacing existing developed areas with new development, could degrade the existing visual character or quality of public views of the site and its surroundings resulting from densities, building heights, building massing, and other types of exterior building materials and elements that could occur with new development. These effects could degrade the existing visual character or quality of public views of the site, and would be a **significant impact**.

The Housing Element Update proposes potential housing sites to be located in a variety of landscape settings, including the pastoral and rural areas around Tomales Bay and the Rural Inland Corridor, valley areas, and other areas with views of rolling hills and grassland fields. However, public views are already limited by existing structures or by the woodland areas where some sites are proposed. Other locations already have development on the site; these sites would primarily entail reuse of the site (e.g., redevelopment with a related change in land use) or use of underutilized sites (e.g., increased density or intensity of development). Vacant sites proposed for future development are predominantly located in or adjacent to existing developed areas, representing "infill" opportunities. The County's Multi-Family Residential Design Guidelines provide for a "place-based" approach to the different visual settings and contexts in the county. "Residential neighborhoods" are where housing is generally the only use, and "mixed-use centers" are where retail shops, housing, and other local-serving uses share an environment. Multi-family residential neighborhoods tend to be relatively close to U.S. 101 and therefore are mainly in the eastern county. Mixed-use centers are predominantly on commercial properties in eastern Marin County. "Rural towns" are generally located in the western part of the county, and surrounded by natural and agricultural land.

Guidelines regarding building shape and/or massing vary among the settings. For example, for "residential neighborhoods," a building's shape "should be articulated to reduce the appearance of mass." For "Mixed-use centers," the mass of buildings "should be built toward streets and plazas to help define these spaces spatially and to create a stronger sense of activity and



place.” For “rural towns,” buildings should “maintain simple geometric volumes, as are used among traditional styles and vernacular agricultural buildings.”<sup>11</sup>

Though these three settings are distinct, they share common design principles, including this: “In each community, respect and enhance essential design characteristics that make it attractive and livable. Protect Marin’s scenic qualities, especially views of ridgelines, hillsides, water, and trees.”<sup>12</sup>

The County’s design review process for discretionary projects is discussed in Impact 4-1, as well as the current project to prepare objective design standards that will be applied to ministerial projects, including streamlined projects exempt from CEQA review. However, new development could introduce building massing out of scale with the existing visual character of the area; new development could also include setbacks or site layouts that are incompatible with established neighborhoods, or propose building heights that obscure or block public views. Although some potential housing facilitated by the Housing Element Update would be required to comply with County Code Chapter 22.16 – Discretionary Development Standards and County Code Chapter 22.42 – Design Review, conclusions regarding effects on the visual character and quality of the area would be speculative without specific project designs. This would be a *potentially significant impact*.

Other housing facilitated by the Housing Element Update could include ministerial projects or projects proposing a streamlined review, which would not be subject to County discretionary design standards or design review. A number of these projects would be subject to objective design standards, but no specific project design details are known at this time. The effectiveness of objective design standards would be speculative, and the impact would be *potentially significant*.

Although objective design standards are likely to be adopted by the time a housing development application is submitted for “streamlined” review, it is unknown whether these standards would minimize project effects on the visual character or quality of the area sufficiently to reduce project effects to less-than-significant. In addition, the effectiveness of County design review of discretionary projects without details of the site design and building scale and location would be speculative. Because neither the County’s design review process nor use of objective design standards, when adopted, may be adequate to reduce project effects on the visual character or quality of the area to a less-than-significant level, and no additional feasible mitigation is available for ministerial and streamlined projects, this impact would be ***significant and unavoidable***.

**Mitigation.** No feasible mitigation is available. This impact would remain ***significant and unavoidable***.

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<sup>11</sup>Community Development Agency, Planning Division, Multi-Family Residential Design Guidelines, December 10, 2013, p. 2-7.

<sup>12</sup>Multi-Family Residential Design Guidelines, p. 1-4..

**Impact 4-3: Project Light and Glare Effects.** [*Threshold of Significance (d)*] Potential future housing development facilitated by the Housing Element Update would result in new sources of light from lighting installed as part of new buildings and site improvements to illuminate entries, parking areas, sidewalks, and open spaces for safety and security and to highlight architectural features. This would contribute to overall lighting in the area, which could affect residential neighbors and the natural setting. However, County Code Section 22.16.030(G) contains standards for exterior lighting of buildings: “Exterior lighting visible from off-site should be allowed for safety purposes only, shall consist of low-wattage fixtures, and should be directed downward and shielded to prevent adverse lighting impacts on nearby properties, subject to the approval of the Director.” Because the low-wattage fixtures, shielding, and downward alignment would minimize light and glare effects, including potentials for nuisance lighting, Project compliance with these County standards would ensure that impacts related to light and glare from future development facilitated by the Project would be ***less-than-significant***.

### **Cumulative Aesthetics Impacts**

Future cumulative development outside of the Project planning area could result in substantial adverse effects on scenic vistas, degradation of the existing visual character or quality of public views of project sites and their surroundings, and creation of new sources of substantial light or glare that would adversely affect day or nighttime views. These types of impacts would be localized in nature, and projects being developed in the 11 incorporated cities and towns would be required to comply with the design standards of their respective jurisdictions. Other jurisdictions’ design standards would likely be similar to those discussed above in Section 4.2, Regulatory Setting, and described in Impact 4-1, Impact 4-2, and Impact 4-3. For areas within the unincorporated county, Marin County Code regulations and standards would also apply. However, as discussed above in Impact 4-1 and 4-2, County design review would not necessarily apply to all potential future development facilitated by the Project. For example, design review does not apply to non-discretionary projects. Also, though the County plans to adopt Objective Design Standards, because the specific standards are not known at this time nor have any project plans/designs been submitted, an individual project’s potential impacts on scenic vistas or on existing visual character and quality cannot be assured to be less-than-significant. For non-discretionary projects or projects using streamlining options such as projects proposed under SB 743 or proposed under SB 35, no other mitigation would be allowed. Because the outcome of this decision-making process for any individual, future proposal cannot be guaranteed at this time, the impact is considered *significant and unavoidable*. The Project’s contribution to cumulative aesthetics impacts would be ***significant and unavoidable***. For light and glare effects, Project compliance with local regulations would reduce impacts to a less-than-significant level and would reduce the Project’s contribution to cumulative light and glare impacts to a ***less-than-significant level***.

## 5. AGRICULTURAL AND FORESTRY RESOURCES

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Agricultural and Forestry Resources. <i>Would the project:</i></b>				
a) <i>Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?</i>				X
b) <i>Conflict with existing zoning for agricultural use, or a Williamson Act contract?</i>			X	
c) <i>Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned for Timberland Production (as defined by Government Code Section 51104[g])?</i>				X
d) <i>Result in the loss of forest land or conversion of forest land to non-forest use?</i>				X
e) <i>Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?</i>			X	

This EIR chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, and discusses Project goals, policies, and implementation programs that would avoid or reduce those potential impacts.

### 5.1 ENVIRONMENTAL SETTING

Agriculture is an important industry in Marin County and a central part of the County's identity. Agricultural activities contribute to regional economic health and prosperity, define a large part of the County's rural visual appearance, support wildlife habitats and migration corridors, and provide open space and separation from urban land uses.

#### 5.1.1 County Agricultural Resources

About 42 percent of the land in Marin County is used for farming or ranching. The County's varying topography, lack of "prime" soils, and often unreliable water supplies do not allow for

<sup>1</sup>State CEQA Guidelines, Appendix G, item II (a through e).

more traditionally intensive agriculture like row crops; however, some areas in the County with alluvial soils support a diverse range of vegetable and specialty crops. Also, the foggy, moist conditions in the County's coastal area benefit high-quality grasslands and keep them green for much of the year, making this area well suited to grazing dairy cattle, beef cattle, and sheep.<sup>2</sup>

A. Agricultural Production. As of 2020, the highest value agricultural commodities produced in Marin County included milk, poultry, cattle and calves, pasture and range, vegetables, shellfish, sheep and lambs, fodder, wine grapes, and hay.<sup>3</sup> Dairy farms in the County generate the highest percentage of dollars from agricultural products, and milk production comprises about 43 percent of total agricultural revenue in the County. There are approximately 23 dairies – including one sheep, one water buffalo, and two goat dairies – in the County. Livestock production for meat involves beef cattle, cow/calf, sheep, and hog operations and is the second largest agriculture sector in the County. The number of poultry producers increased from 47 to 54 between 2012 and 2020, and in 2020, poultry production represented over 20 percent of the County's total agricultural value.<sup>4</sup>

B. Farmland Classification and Farmland Conversion. Agricultural land is rated according to soil quality and irrigation status, with the best quality land designated "Prime Farmland." The California Department of Conservation tracks changes in farmland classification and prepares a report every two years with agricultural land conversion rates as part of the Farmland Mapping and Monitoring Program (FMMP). The FMMP helps the State maintain an inventory of agricultural lands. State farmland designations include:<sup>5</sup>

- *Prime Farmland* has the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields.
- *Farmland of Statewide Importance* is similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture, among other characteristics;
- *Unique Farmland* is generally of lesser quality soils used for the production of the state's leading agricultural crops;
- Farmland of Local Importance is determined by each county's board of supervisors and a local advisory committee; for instance, in Marin County this includes "land which is not irrigated, but is cultivated; or has the potential for cultivation;"<sup>6</sup>

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<sup>2</sup>U.C. Cooperative Extension, "Amazing but True Facts about Marin County Agriculture," October 2021.

<sup>3</sup>California Department of Food and Agriculture, County Agricultural Commissioners' Reports Crop Year 2019-2020, p. 12; County of Marin, Department of Agriculture, Weights & Measures, 2020 Marin County Crop and Livestock Report, pp. 6-7.

<sup>4</sup>U.C. Cooperative Extension, "Amazing but True Facts about Marin County Agriculture," October 2021.

<sup>5</sup>California Department of Conservation, Important Farmland Categories, <https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx>, accessed 5/19/22.

<sup>6</sup>California Department of Conservation, Farmland Mapping and Monitoring Program, Land Use Conversion, 2014-2016, "Appendix E: Farmland of Local Importance Definitions," [https://www.conservation.ca.gov/dlrp/fmmp/Pages/county\\_info.aspx](https://www.conservation.ca.gov/dlrp/fmmp/Pages/county_info.aspx), accessed 5/18/22.

- Grazing Land includes land that has existing vegetation suited to the grazing of livestock;
- Urban and Built-up Land is generally land occupied by structures and typically used for residential, industrial, commercial, institutional, and other developed purposes, including airports, golf courses, sewage treatment, and other infrastructure; and
- Other Land is comprised of land not included in any other mapping category.

Table 5-1 shows changes in farmland status between 2014 and 2016. As shown in the table, Prime Farmland increased slightly, while Farmland of Statewide Importance and Unique Farmland both decreased slightly. Farmland of Local Importance decreased by approximately 483 acres. Grazing Land increased by approximately 649 acres.

C. Farmland Protection (Williamson Act). Marin County encourages preserving agricultural land and has established zoning regulations to restrict the uses of some land to agriculture. The County sometimes offers certain tax benefits to property owners who commit to using their land for commercial agricultural production, which rely on a State law known as the California Land Conservation Act of 1965 (the “Williamson Act”), whereby the owner of an agricultural property enters into a contract with the County restricting use of the land to agricultural purposes and thereby eliminates the potential subdivision of the land in exchange for a reduction in the land’s assessed value, which decreases the property taxes.<sup>7</sup> These contracts are automatically renewed every year.<sup>8</sup>

In addition, the Marin Agricultural Land Trust (MALT), established in 1980, protects farmland in Marin County primarily through use of agricultural conservation easements, which are legal agreements between MALT and a farmland owner guaranteeing the land’s ongoing agricultural use though the purchase by MALT of all development rights, effectively extinguishing them in perpetuity. The land continues to remain in the farmer’s or rancher’s ownership.<sup>9</sup>

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<sup>7</sup>Under Government Code Section 51230.2, landowners are allowed to subdivide up to five acres of the preserved land for sale or lease to a nonprofit organization, a city, a county, a housing authority, or a state agency in order to facilitate the development and provision of agricultural worker housing.

<sup>8</sup>Chelsea Hall, Environmental Planning & Housing Aide, Marin County Community Development Agency, email dated May 13, 2022, to MIG, Inc.

<sup>9</sup>Marin Agricultural Land Trust, “Farmland Protection,” <https://malt.org/farmland-protection/>, accessed 5/17/22.

**Table 5-1:  
Marin County Farmland Classification Summary**

Farmland Mapping and Monitoring Program Land Classification Category	Total Acreage Inventoried		
	2014	2016	Change (+/-)
Prime Farmland	0	1	+1
Farmland of Statewide Importance	141	137	-4
Unique Farmland	280	279	-1
Farmland of Local Importance	63,344	62,861	-483
<i>Important Farmland Subtotal</i>	63,765	63,278	-487
Grazing Land	88,805	89,454	+649
<i>Agricultural Land Subtotal</i>	152,570	152,732	+162
Urban and Built-Up Land	41,860	41,609	-251
Other Land	139,485	138,270	-1,215
Water	44,747	46,051	+1,304
<b>Total Area Inventoried</b>	<b>378,662</b>	<b>378,662</b>	<b>0</b>

Source: California Department of Conservation, Farmland Mapping and Monitoring Program, Land Use Conversion, 2014-2016 reporting period, Table A-16: Marin County, [https://www.conservation.ca.gov/dlrp/fmmp/Pages/county\\_info.aspx](https://www.conservation.ca.gov/dlrp/fmmp/Pages/county_info.aspx), accessed 5/18/22.

**D. Resource Conservation.** The Marin Resource Conservation District (RCD) has been directly involved in carbon sequestration research, planning, and implementation as a partner in the Marin Carbon Project, which seeks to identify and implement strategies for enhancing carbon sequestration on agricultural and rangelands. The carbon project focuses on methods to increase the rate of carbon dioxide removal from the atmosphere and conversion to plant material and soil organic matter.<sup>10</sup> As of 2020, the Marin Resource Conservation District had completed 20 Carbon Farm Plans, and \$1.5 million in State grants had been awarded to Marin ranchers to assist with the implementation of carbon farming practices across 16 different projects.<sup>11</sup>

**E. Agricultural Worker Housing.** The majority of agricultural operations in Marin County are third- to fifth-generation family-owned farms. Much of the county’s agricultural production requires a year-round, permanent workforce. Quality affordable housing for agricultural workers and their families is needed to promote the county’s agriculture base into the future. The County has been actively exploring options to expand housing quality and choices for agricultural workers and their families, including collaborating with nonprofit housing agencies and

<sup>10</sup>Marin Resource Conservation District, <https://www.marinrcd.org/carbon-farming/>, accessed 9/21/22.

<sup>11</sup>County of Marin Community Development Agency, Marin County Unincorporated Area Climate Action Plan 2030, December 2020, p. 9. [https://www.marincounty.org/-/media/files/departments/cd/planning/sustainability/climate-and-adaptation/cap-2030\\_12082020final.pdf](https://www.marincounty.org/-/media/files/departments/cd/planning/sustainability/climate-and-adaptation/cap-2030_12082020final.pdf), accessed 9/21/22.

investigating the possibility of using County-owned sites. This issue is discussed further in the Housing Element Update.<sup>12</sup>

### 5.1.2 County Forest/Timberland Resources

In 2021, timber production in Marin County totaled approximately 1,109 million board feet of lumber, which represents slightly less than 0.07 percent of the timber harvested in the State during that year.<sup>13</sup> According to County Planning staff, there are currently no County-designated Forest Resource or Timberland zones.<sup>14</sup>

### 5.1.3 Candidate Housing Sites

As discussed in Chapter 3, Project Description, the Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Section 3.4.2(c) in Chapter 3, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of “candidate housing sites,” which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts. These sites are generally located along the west side of the County (the Coastal Corridor) from Tomales south to Stinson Beach; along the east side from the Novato area south to Marin City (the Baylands and City-Centered Corridors); around Nicasio; in the Lucas Valley-Marino area; and in the Lagunitas-Forest Knolls/San Geronimo/Woodacre area (the Inland Rural Corridor). None of these locations is on designated Prime Farmland, Farmland of Statewide Importance, or Unique Farmland; however, a few sites (or parts thereof) are located on Farmland of Local Importance (in all four environmental corridors) or Grazing Land (in the City-Centered Corridor).<sup>15</sup>

Based on County database and mapping sources, none of the proposed candidate housing sites is under a Williamson Act Contract or within a Farmland Security Zone, which allow for contracts protecting farmland to be entered into with landowners, although some terms and requirements are different from Williamson Act contracts.<sup>16</sup>

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<sup>12</sup>Public Review Draft, Housing Element Update 6th Cycle 2023-2031, Marin Countywide Plan, June 2022, pp. 71-74. 150-152.

<sup>13</sup>California Department of Tax and Fee Administration, Timber Production Figures (Table 33B), <https://www.cdtfa.ca.gov/dataportal/dataset.htm?url=PropTaxTimberProductionStats>, accessed 5/19/22.

<sup>14</sup>Chelsea Hall, Environmental Planning & Housing Aide, Marin County Community Development Agency, email dated May 13, 2022, to MIG, Inc.

<sup>15</sup>Marin County Housing & Safety Elements, “Map Atlas: Candidate Housing Sites and Existing Conditions and Constraints,” <https://www.marincountyatlas.org/natural-resources>, accessed 5/19/22.

<sup>16</sup>Marin GeoHub, Williamson Act Parcel, <https://gisopendata.marincounty.org/datasets/MarinCounty::williamson-act-parcel/explore?location=38.016425%2C-122.674500%2C10.98&showTable=true>, accessed 5/18/22; Marin GeoHub, Farmland Security Act Parcel, <https://gisopendata.marincounty.org/datasets/MarinCounty::farmland-security-act-parcel/explore?location=38.098396%2C-122.743500%2C11.50&showTable=true>, accessed 5/19/22.

## 5.2 REGULATORY SETTING

### 5.2.1 Federal Regulations and Laws

**Federal Farmland Protection Act.** The Natural Resources Conservation Service (NRCS), an agency of the U.S. Department of Agriculture (USDA), is the agency primarily responsible for implementing the federal Farmland Protection Policy Act (FPPA). The purpose of the FPPA is to minimize federal contributions to the conversion of farmland to nonagricultural land uses by ensuring that federal programs are administered in a manner compatible with state government, local government, and private programs designed to protect farmland. The FPPA established the Farmland Protection Program (FPP), which is a voluntary program administered by the Natural Resources Conservation Service (NRCS), an agency of the U.S. Department of Agriculture (USDA). The FPP provides funds to help purchase development rights to keep productive farmland in agricultural land uses. This program provides matching funds to state, local, and tribal government entities, and nongovernmental organizations with existing farmland protection programs to purchase conservation easements. Participating landowners agree not to convert the land to nonagricultural land uses and retain all rights to the property for future agriculture production.

### 5.2.2 State Regulations and Laws

**California Department of Conservation Farmland Mapping and Monitoring Program (FMMP).** The California Department of Conservation (DOC) administers the Important Farmland Mapping and Monitoring Program (FMMP), which evaluates the quality of farmlands throughout the State of California. The suitability of the local soil resources plays a crucial role in the FMMP's farmland classifications. The FMMP uses the U.S. Department of Agriculture Natural Resource Conservation Service (USDA NRCS) soil survey information, land inventory, and monitoring criteria to classify most of the state's agricultural regions into five agricultural and three nonagricultural land types. Every two years, the FMMP publishes this information in its Important Farmland map series. The FMMP is an informational service only and does not constitute state regulation of local land use decisions.

**California Farmland Conservancy Program.** The California Farmland Conservancy Program (CFCP) seeks to encourage the long-term, private stewardship of agricultural lands through the voluntary use of agricultural conservation easements. The CFCP provides grant funding for easement and planning projects that support agricultural land conservation statewide. As of January 2015, CFCP funded more than 175 conservation easements, permanently conserving some of the state's best farmland in agricultural regions throughout the state.

**California Land Conservation Act (Williamson Act).** The State policy used in regulating farmlands is the California Land Conservation Act of 1965, commonly referred to as the Williamson Act. The purpose of the Williamson Act is to integrate the protection of open space and agricultural resources into their overall strategies for planning urban growth patterns. The Williamson Act allows local governments to enter into private contracts with landowners for the purpose of restricting the land for agricultural or related open space uses.

**Sections 65560–65570, Government Code: Open Space Lands.** This portion of California planning law defines open space (including rangeland and agricultural land) and requires each city and county to prepare an open space plan as a required element of its General Plan. Building permits, subdivision approvals, and zoning ordinance approvals must be consistent with the local open space plan.



### 5.2.3 Regional/Local Regulations

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses agricultural and forestry issues. Applicable adopted CWP policies include:

#### **Natural Systems and Agriculture Element – Agriculture and Food policies**

- Policy AG-1.1: Limit Residential Use. Maintain agricultural production as the principal use on agricultural lands by limiting residential development to that which is reasonably related to agriculture.
- Policy AG-1.2: Encourage Contractual Protection. Facilitate agricultural conservation easements, land conservation and Farmland Security Zone contracts, and transfer of development rights between willing owners when used to preserve agricultural lands and resources.
- Policy AG-1.3: Preserve Agricultural Zoning. Maintain very low density agricultural zoning in the Inland Rural and Coastal corridors to support land-extensive agricultural production and discourage conversion to non-agricultural uses.
- Policy AG-1.4: Limit Non-Agricultural Zoning. Apply non-agricultural zoning only in areas where conflict with agricultural uses will be minimized, and ensure that development standards preserve and enhance nearby agricultural uses.
- Policy AG-1.5: Restrict Subdivision of Agricultural Lands Within the Coastal, Inland Rural, and Baylands Corridors. Require that the subdivision of agricultural lands shall only be allowed upon demonstration that long-term productivity on each parcel created would be enhanced as a result of subdivision. In the City-Centered Corridor, subdivision of agricultural lands shall only be allowed upon demonstration that the overall agricultural productivity of the subdivided parcels would not be reduced as a result of the subdivision. In considering subdivisions in all corridors, the County may approve fewer parcels than the maximum number of parcels allowed by applicable Countywide Plan land use designation and by the Development Code, based on site characteristics such as topography, soil, water availability, and the capacity to sustain viable agricultural operations.
- Policy AG-1.6: Limit Non-Agricultural Development. Limit non-agricultural development in the Agricultural Production Zone to residential and accessory uses that are ancillary to and compatible with agricultural production. Require dwellings and other non-agricultural development to be limited in size and grouped together in building envelopes covering no more than 5% of the property or as determined through a site-specific analysis of agricultural and environmental constraints and resources, with the remainder preserved for agricultural production. Residential and non-agricultural development on very large parcels may be limited to less than 5% of the land area.
- Policy AG-1.7: Limit Ancillary Non-Agricultural Land Uses. Require non-agricultural land uses on agricultural lands to be ancillary to and compatible with agricultural land uses, agricultural production, and the rural character of the area, and to enhance the economic viability of agricultural operations.
- Policy AG-1.8: Maintain the Agricultural Land Base. Encourage private and public owners of lands that have traditionally been used for agriculture to keep land in agricultural use by continuing existing agricultural uses, developing compatible new agricultural uses, and/or leasing lands to agricultural operators.

- Policy AG-1.9: Continue Agricultural Uses on Federal Land. Encourage continuation of agricultural operations and uses in the pastoral zones of the Point Reyes National Seashore and the Golden Gate National Recreation Area through long-term tenure agreements (leases) with agricultural operators.
- Policy AG-1.10: Protect Productive Agricultural Soils. Discourage or prohibit non-agricultural buildings, impermeable surfaces, or other non-agricultural uses on soils classified by the Natural Resources Conservation Service as Prime Farmland soils or Farmland soils of Statewide Importance.
- Policy AG-1.11: Preserve Rangeland Forage. Discourage the conversion of rangeland to nonagricultural uses.
- Policy AG-1.12: Support Sustainable Water Supplies. Explore opportunities to provide sustainable water supplies, such as water conservation, collection, treatment, and reuse, to support small-scale agricultural diversification in a manner that does not adversely affect aquatic or other resources.
- Policy AG-1.13: Protect Water Quality to Keep Mariculture Viable. Protect and enhance the quality of waters used for mariculture through cooperation with other stakeholders, and outreach and education.
- Policy AG-2.2: Support Local, Organic, and Grass-Fed Agriculture. Encourage and protect local, organic, grass-fed, and other ecologically sound agricultural practices, such as dry farming, including field crops and animal agriculture, as a means to increase on-farm income, diversify Marin agriculture, and provide healthy food for the local supply.
- Policy AG-2.3: Support Small-Scale Diversification. Diversify agricultural uses and products on a small percentage of agricultural lands to complement existing traditional uses, help ensure the continued economic viability of the county agricultural industry, and provide increased food security.
- Policy AG-2.4: Encourage Agricultural Processing. Encourage processing and distribution of locally produced foods to support local food security and strengthen Marin's agricultural industry.
- Policy AG-2.6: Promote Small-Scale Crop Production. Encourage small-scale row crop production that contributes to local food security on appropriate sites throughout the county.
- Policy AG-2.7: Preserve and Promote Mariculture. Support maricultural usage of tidelands and onshore production areas. The need for mariculture sites in coastal waters should be aligned with the need to provide for other uses, such as commercial fishing, recreational clamming and boating, and protection of coastal native wildlife species, water, and visual resources.
- Policy AG-2.8: Avoid Introduction of Invasive Mariculture Species. Encourage State and federal regulatory agencies that permit mariculture activities to prevent the introduction of invasive species.
- Policy AG-2.9: Support Livestock Production Programs. Assist ranchers in using nonlethal methods to protect herd animals from predators.
- Policy AG-2.10: Increase Knowledge of Agriculture. Raise the level of public awareness and understanding of Marin County agriculture, including its ecological, economic, open space, and cultural value, and its importance to local food security.

- Policy AG-3.1: Support Local Food Production. Promote local food production in agricultural zoning districts, as well as on appropriate urban and suburban lands.
- Policy AG-3.2: Promote Local and Organic Food. Increase consumer appreciation of, and access to, locally produced and organic food and agricultural products.

### **Built Environment Element – Community Development policies**

- Policy CD-1.1: Direct Land Uses to Appropriate Areas. Concentrate urban development in the City-Centered Corridor, where infrastructure and facilities can be made available most efficiently. Protect sensitive lands in the Baylands Corridor. Emphasize agricultural uses in the Inland Rural Corridor, along with preservation of resources, habitat, and existing communities. Focus on open space, recreational, and agricultural land uses, as well as preservation of existing communities, in the Coastal Corridor.
- Policy CD-8.4: Establish Agriculture and Conservation Land Use Categories. Agriculture and Conservation land use categories are established for land with resource values both for agricultural production and for wetlands and wildlife habitat. These lands may also have physical constraints, such as heavily wooded hillsides and ridgelines, that limit their potential for agricultural production and deserve protection on the basis of their habitat and visual resource values. Historically, 60 acres has been the minimum parcel size for most agricultural and resource conservation lands in the county. Various policies regarding agricultural productivity, water availability, effects on water quality, and other factors govern the subdivision of such lands, along with the densities and intensities described below. The effect is that subdivisions of agricultural and resource conservation lands are rare. The following Agricultural and Conservation land use categories are established:
  - Agriculture and Conservation 1. This land use category is established for agricultural and conservation uses, including nonresidential structures necessary for agricultural operations at a floor area ratio (FAR) of .01 to .091F1, and housing at a density of one dwelling unit per 31 to 60 acres.
  - Agriculture and Conservation 2. This land use category is established for agricultural and conservation uses, including nonresidential structures necessary for agricultural operations at a floor area ratio (FAR) of .01 to .091, and housing at a density of one dwelling unit per 10 to 30 acres.
  - Agriculture and Conservation 3. This land use category is established for agricultural and conservation uses, including nonresidential structures necessary for agricultural operations at a floor area ratio (FAR) of .01 to .091, and housing at a density of one dwelling unit per 2 to 9 acres, with an emphasis on affordable housing.
- Policy CD-8.5: Establish Agricultural Land Use Categories. Agriculture land use categories are established to preserve and protect a variety of agricultural uses, and to enable the potential for agricultural production and diversification. Historically, 60 acres has been the minimum parcel size for most agricultural lands in the county. Various policies regarding agricultural productivity, water availability, effects on water quality, and other factors govern the subdivision of such lands, along with the intensities described below. The effect is that subdivisions of agricultural lands are rare. The following Agricultural land use categories are established:
  - Agriculture 1. This land use category is established for agricultural uses, including nonresidential structures necessary for agricultural operations at a floor area ratio

- (FAR) of .01 to .091, and housing with a density of one dwelling unit per 31 to 60 acres.
- Agriculture 2. This land use category is established for agricultural uses, including nonresidential structures necessary for agricultural operations at a floor area ratio (FAR) of .01 to .091, and housing with a density of one dwelling unit per 10 to 30 acres.
  - Agriculture 3. This land use category shall be provided for agricultural uses, including nonresidential structures necessary for agricultural operations at an FAR of .01 to .091, and housing with a density of one dwelling unit per 1 to 9 acres.

**Built Environment Element – Planning Areas policies (these policies pertain specifically to the West Marin Planning Area)**

- Policy PA-7.1: Designate Lands for Agriculture. The County shall designate lands for agriculture at very low densities in the Inland Rural and Coastal corridors, and maintain these land use designations.
- Policy PA-7.2: Encourage Agriculture and Mariculture in the Coastal Zone. Support and encourage agriculture and mariculture in the Coastal Zone for the purposes of producing food, enhancing and restoring fisheries stocks, and contributing to the State’s economy. Retaining land in active agricultural production helps to keep alive Marin’s historic agricultural heritage. The need for mariculture sites in the waters of Tomales Bay should be balanced with the need to provide for other uses, such as commercial fishing, recreational clamming, and boating, and the need to protect coastal wildlife, water, and visual resources.

**Marin County Development Code (Title 22 of the Marin County Code).** Chapter 23.03 (Right to Farm) is intended to reduce the loss to the County of its agricultural resources by limiting the circumstances under which agricultural operations may be considered a nuisance. Chapter 23.04 (Timber Harvesting Regulations) describes the process for obtaining a permit to engage in “cutting of timber and/or removal of forest products for commercial purposes, together with all the work incidental thereto such as road building, tree marking, hazard reduction, etc.”

**5.3 IMPACTS AND MITIGATION MEASURES**

This section describes potential impacts related to agricultural and forestry resources that could result from the Project, and discusses Project policies and actions that would avoid or reduce those potential impacts.

**5.3.1 Thresholds of Significance**

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to agricultural and forestry resources if it would:

- A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- B. Conflict with existing zoning for agricultural use, or a Williamson Act contract;

C. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned for Timberland Production (as defined by Government Code Section 51104[g]);

D. Result in the loss of forest land or conversion of forest land to non-forest use; or

E. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

### 5.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

Neither the Housing Element Update nor the Safety Element Update include policies or implementing programs that directly address CEQA-defined agricultural and forestry impacts.

### 5.3.3 Impacts and Mitigation Measures

The Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Chapter 3, Project Description, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of “candidate housing sites,” which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event “Project Sites” prove infeasible or undesirable due to potential environmental impacts.

This agricultural and forestry resources evaluation applies to the Candidate Housing Sites and is provided at a programmatic level consistent with the level of detail of the proposed Project.

**Impact 5-1: Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.** As discussed in section 5.1.3, none of the proposed candidate housing site locations is on designated Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. Therefore, development on those sites would not result in the conversion or loss of these types of farmland, and there would be *no impact* on Prime Farmland, Farmland of Statewide Importance, or Unique Farmland as a result of the Project.

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### Impact 5-2: Conflicts With Agricultural Use Zoning or Williamson Act Contracts.

Development under the Housing Element on some of the parcels proposed as candidate housing sites would occur in agricultural zoning districts (e.g., A2, A60, ARP); however, as stated in County Code Section 22.08.030 (Agricultural District Land Uses and Permit Requirements), some residential uses (affordable housing, agricultural worker housing, group homes for six or fewer residents, ADUs, and junior ADUs) are principally permitted uses in the A2 and ARP districts, and other residential uses (group homes for seven or more residents) are allowable subject to approval of a Use Permit. In the A60 district, agricultural worker housing, group homes for six or fewer residents, ADUs, and junior ADUs are principally permitted uses, and affordable housing and group homes for seven or more residents are allowable subject to approval of a Use Permit. Additional development standards in these districts, as stated in County Code Chapter 22.22 (Affordable Housing Regulations), Chapter 22.32.023 (Agricultural

Worker Housing), Chapter 22.32.120 (Residential Accessory Dwelling Units), and Chapter 22.32.125 (Residential Junior Accessory Dwelling Units), must be complied with. Therefore, if a Use Permit is approved for future housing developed in an agricultural zoning district, there would be no conflict with agricultural use zoning. In addition, none of the proposed candidate housing sites is under a Williamson Act Contract, as discussed in section 5.1.3. Therefore, there would be no conflict related to Williamson Act Contracts. However, sites in agricultural zoning districts would be subject to Use Permit Approval and any conditions included therein. This impact would be ***less-than-significant*** when a decision regarding a Use Permit is made.

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**Impact 5-3: Conflicts With Forest Land or Timberland Zoning.** Development under the Housing Element would not conflict with forest land or timberland because, as discussed in section 5.1.2, there are currently no County-designated Forest Resource or Timberland zones, and none of the proposed candidate housing sites is located in a designated forestland or timberland area. Therefore, development on those sites would not result in conflicts with forest land or timberland zoning, and there would be ***no impact*** related to forest land or timberland zoning conflicts as a result of the Project.

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**Impact 5-4: Loss or Conversion of Forest Land to Non-Forest Use.** See Impact 5-3. Development under the Housing Element would not result in the loss of forest land or the conversion of forest land to non-forest use because none of the proposed candidate housing sites is located on forest land: therefore, development on those sites would not result in the conversion or loss of forest land, and there would be ***no impact*** as a result of the Project.

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**Impact 5-5: Conversion of or Change in Farmland to Non-Agricultural Use.** Housing facilitated by the Housing Element Update would include development on vacant sites and also replacing existing developed areas with new development, with possible associated road improvements for evacuation routes or other access provisions facilitated by the Safety Element Update. Changes in land use designation and/or zoning may be required for proposed sites that are located on parcels designated as Farmland of Local Importance or Grazing Land. Sites zoned for agricultural use would not require rezoning if the proposed use is permitted or conditionally permitted as provided for in County Code Chapter 22.08 – agricultural and resource-related districts.

Uses not permitted or conditionally permitted by the County Code would require a change in land use designation, which would be a conversion of farmland to non-agricultural use, which would be a ***significant impact***. However, several adopted CWP policies that protect agricultural uses would apply to these new uses. These policies are listed below, and their full text is included in subsection 5.2.3 (Regional/Local Regulations):

- Policy AG-1.1: Limit Residential Use.
- Policy AG-1.3: Preserve Agricultural Zoning.
- Policy AG-1.4: Limit Non-Agricultural Zoning.
- Policy AG-1.5: Restrict Subdivision of Agricultural Lands Within the Coastal, Inland Rural, and Baylands Corridors.

Therefore, Project compliance with these adopted CWP policies and County agricultural and resource-related districts regulations would ensure that any potential impacts related to the conversion or change in farmland to non-agricultural use from future development facilitated by the Project would be ***less-than-significant***.

### **Cumulative Agricultural and Forestry Resources Impacts**

Future cumulative development outside of the Project planning area would include the 11 incorporated cities and towns in Marin County. Cumulative development would have limited impacts related to conversion of farmland because most of the land in these cities and towns is designated by the California Department of Conservation as “urban and built-up land.” There would be no cumulative impacts related to forest land or timberland because, as discussed in this chapter, there are currently no County-designated Forest Resource or Timberland zones. For areas within the unincorporated county, the only impact from the Project would be Impact 5-5 related to conversion of or change in farmland to non-agricultural use. Project compliance with adopted CWP agricultural policies and County Code agricultural and resource-related regulations would ensure that these impacts would be ***less-than-significant***. Therefore, future potential development facilitated by the Project would not make a cumulatively considerable contribution to any significant cumulative impact with respect to agricultural land or forestry resources, and this impact would be ***less-than-significant***.

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## 6. AIR QUALITY

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<i>Air Quality. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:</i>				
<i>a) Conflict with or obstruct implementation of the applicable air quality plan?</i>	X			
<i>b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?</i>	X			
<i>c) Expose sensitive receptors to substantial pollutant concentrations?</i>	X <i>(part)</i>		X <i>(part)</i>	
<i>d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?</i>			X	
<p>Note: Certain environmental issue areas address both temporary and permanent effects in a single checklist question. Where necessary, the table identifies that separate findings have been made for “part” of the issue area (e.g., the impact may be potentially significant for temporary effects but less than significant for permanent effects, or vice versa). Refer to Section 6.3 for full impact discussions and disclosures.</p>				

This chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project,<sup>2</sup> and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts.

The methodologies and assumptions used in the preparation of this section follow the CEQA Guidelines developed by the Bay Area Air Quality Management District (BAAQMD). Information

<sup>1</sup>State CEQA Guidelines, Appendix G, item III (a through d).

<sup>2</sup>The air quality analysis contained in Section 6.3 is based on the construction and operation of 10,993 dwelling units (candidate housing sites), which are more than the 5,214 dwelling units that would be facilitated by adoption of the Housing Element Update (project sites inventory), and the 3,569 dwelling units that are required by the Regional Housing Needs Allocation (RHNA). The air quality analysis’ assumptions, which provide a conservative assessment of potential impacts, are consistent with the land use and transportation modeling assumptions used in the Greenhouse Gas / Energy Chapter (Chapter 10), Noise Chapter (Chapter 15), and Transportation Chapter (Chapter 18)).

on existing air quality conditions, federal, and State ambient air quality standards, and pollutants of concern was obtained from the U.S. Environmental Protection Agency (U.S. EPA), California Air Resources Board (CARB), and BAAQMD. This EIR air quality analysis has been closely coordinated with the energy and greenhouse gas analyses contained in Chapter 10 of this EIR. As described in Section 6.3, potential project impacts with respect to air quality include conflict with or obstruction of the applicable air quality plan, cumulatively considerable net increases in criteria pollutants, exposure of sensitive receptors to substantial pollutant concentrations, and other emissions (such as odors) that could adversely affect a substantial number of people.

## **6.1 Environmental Setting**

Air quality is a function of pollutant emissions and topographic and meteorological influences. The physical features and atmospheric conditions of a landscape interact to affect the movement and dispersion of pollutants and determine its air quality.

### **6.1.1 San Francisco Bay Area Air Basin**

The U.S. EPA and CARB are the federal and State agencies charged with maintaining air quality in the nation and California, respectively. The U.S. EPA delegates much of its authority over air quality to CARB which has geographically divided the State into 15 air basins for the purposes of managing air quality on a regional basis. An air basin is a CARB-designated management unit with similar meteorological and geographic conditions.

Marin County is located in the northwestern portion of the San Francisco Bay Area Air Basin (SFBAAB) which also includes the counties of Contra Costa, Alameda, Santa Clara, San Mateo, Napa, San Francisco, southeastern Sonoma County, and southwestern Solano (CARB 2017a). These nine counties surround the San Francisco Bay. The SFBAAB is currently designated as a nonattainment area for a number of different types of air pollutants (including ozone precursors and various forms of particulate matter) under State and Federal ambient air quality standards. The SFBAAB encompasses 101 cities across almost 7,000 square miles, containing more than 7 million people (BAAQMD 2022a).

Air quality in the SFBAAB is managed by the BAAQMD. Pursuant to the California Clean Air Act, BAAQMD is responsible for bringing air quality within the SFBAAB into conformity with federal and State air quality standards by reducing existing emission levels and ensuring that future emission levels meet applicable air quality standards. The BAAQMD works with federal, State, and local agencies to reduce pollutant emissions through adoption and implementation of rules and regulations.

### **6.1.2 Basin Climate and Meteorology**

The climate of the Bay Area region is classified as Mediterranean. The climate is dominated by the Pacific high-pressure system that results in generally mild, dry summers and mild, wet winters. In addition to the basin's topography and geographic location, El Niño and La Niña patterns in the central Pacific Ocean can also have large effects on weather and rainfall received in the SFBAAB between November and March.

Local weather conditions within the SFBAAB are also dependent on local topography and proximity to the Pacific Ocean. Portions of Marin County, such as a portion of southern Marin County and along the west coast, experience fog and steady temperatures, while the eastern portions are warmer with less fog. Wind speeds in the county are higher near the coast.

Pollution levels are lower along the coast and in southern Marin County. Further inland, inversions can lead to high PM<sub>2.5</sub> concentrations in the winter. Ozone levels in Marin County are higher in the summer, but rarely exceed standards (BAAQMD 2019a).

### 6.1.3 Regulated Air Pollutants

The U.S. EPA has established National Ambient Air Quality Standards (NAAQS) for six common air pollutants: ozone (O<sub>3</sub>), particulate matter (PM), which consists of “inhalable coarse” PM (particles with an aerodynamic diameter between 2.5 and 10 microns in diameter, or PM<sub>10</sub>) and “fine” PM (particles with an aerodynamic diameter smaller than 2.5 microns, or PM<sub>2.5</sub>), CO, nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and lead. The U.S. EPA refers to these six common pollutants as “criteria” pollutants because the agency regulates the pollutants on the basis of human health and/or environmentally-based criteria and because they are known to cause adverse human health effects and/or adverse effects on the environment (U.S. EPA, 2020a and 2020b).

CARB has also established California Ambient Air Quality Standards (CAAQS) for the six criteria air pollutants regulated by the federal Clean Air Act (the CAAQS are more stringent than the NAAQS), plus they include the following additional air pollutants due to their known adverse effects on human health or the environment (CARB, 2020a): hydrogen sulfide (H<sub>2</sub>S), sulfur oxides (SO<sub>x</sub>), vinyl chloride, and visibility reducing particles.

A description of the air pollutants associated with the proposed Project and its vicinity is provided below.

- **Ground-level Ozone**, commonly referred to as smog, is not emitted directly into the atmosphere. It is created from chemical reactions between NO<sub>x</sub> and volatile organic compounds (VOCs), also called reactive organic gases (ROG), in the presence of sunlight (U.S. EPA, 2017). Thus, ozone formation is typically highest on hot sunny days in urban areas with NO<sub>x</sub> and ROG pollution. Ozone irritates the nose, throat, and air pathways and can cause or aggravate shortness of breath, coughing, asthma attacks, and lung diseases such as emphysema and bronchitis.
  - **ROG** is a term defined by CARB as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, methane, and ammonium carbonate, and includes several low-reactive organic compounds which have been exempted by the U.S. EPA. (CARB, 2004).
  - **VOCs** is a term defined by the U.S. EPA as any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions. VOCs do not include organic compounds of carbon which have been determined to have negligible photochemical reactivity such as: methane, ethane, and methylene chloride (CARB, 2004).
- **Particulate Matter**, also known as particle pollution, is a mixture of extremely small solid and liquid particles made up of a variety of components such as organic chemicals, metals, and soil and dust particles (U.S. EPA, 2016a).
  - **PM<sub>10</sub>**, also known as inhalable coarse, respirable, or suspended PM, consists of particles less than or equal to 10 micrometers in diameter (approximately 1/7<sup>th</sup> the

thickness of a human hair). These particles can be inhaled deep into the lungs and possibly enter the blood stream, causing health effects that include, but are not limited to, increased respiratory symptoms (e.g., irritation, coughing), decreased lung capacity, aggravated asthma, irregular heartbeats, heart attacks, and premature death in people with heart or lung disease (U.S. EPA, 2016a).

- **PM<sub>2.5</sub>**, also known as fine PM, consists of particles less than or equal to 2.5 micrometers in diameter (approximately 1/30<sup>th</sup> the thickness of a human hair). These particles pose an increased risk because they can penetrate the deepest parts of the lung, leading to and exacerbating heart and lung health effects (U.S. EPA, 2016a).
- **Carbon Monoxide (CO)** is an odorless, colorless gas that is formed by the incomplete combustion of fuels. Motor vehicles are the single largest source of carbon monoxide in the Basin. At high concentrations, CO reduces the oxygen-carrying capacity of the blood and can aggravate cardiovascular disease and cause headaches, dizziness, unconsciousness, and even death (U.S. EPA, 2016b).
- **Nitrogen Dioxide (NO<sub>2</sub>)** is a by-product of combustion. NO<sub>2</sub> is not directly emitted, but is formed through a reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO<sub>2</sub> are collectively referred to as NO<sub>x</sub> and are major contributors to ozone formation. NO<sub>2</sub> also contributes to the formation of particulate matter. NO<sub>2</sub> can cause breathing difficulties at high concentrations (U.S. EPA, 2016c).
- **Sulfur Dioxide (SO<sub>2</sub>)** is one of a group of highly reactive gases known as SO<sub>x</sub>. Fossil fuel combustion in power plants and industrial facilities are the largest emitters of SO<sub>2</sub>. Short-term effects of SO<sub>2</sub> exposure can include adverse respiratory effects such as asthma symptoms. SO<sub>2</sub> and other SO<sub>x</sub> can react to form PM (U.S. EPA, 2016d).
- **Sulfates (SO<sub>4</sub><sup>2-</sup>)** are the fully oxidized ionic form of sulfur. SO<sub>4</sub><sup>2-</sup> are primarily produced from fuel combustion. Sulfur compounds in the fuel are oxidized to SO<sub>2</sub> during the combustion process and subsequently converted to sulfate compounds in the atmosphere. Sulfate exposure can increase risks of respiratory disease (CARB, 2022a).
- **Lead** is a metal found naturally in the environment as well as in manufactured products. Mobile sources used to be the main contributor to ambient lead concentrations in the air. In the early 1970s, the U.S. EPA established national regulations to gradually reduce the lead content in gasoline, and in 1996, lead was banned from gasoline. As a result of these efforts, emissions of lead from the transportation sector and levels of lead in the air decreased dramatically. Lead can adversely affect multiple organ systems of the body and people of every age group. Lead poisoning in young children can cause brain damage, behavioral problems, and liver or kidney damage. Lead poisoning to adults can cause reproductive problems, muscle and joint pain, nerve disorders and kidney disease (CARB, 2016a).
- **H<sub>2</sub>S** is a colorless gas with the odor of rotten eggs. The most common sources of H<sub>2</sub>S emissions are oil and natural gas extraction and processing, and natural emissions from geothermal fields. It is also formed during bacterial decomposition of human and animal wastes, and is present in emissions from sewage treatment facilities and landfills. Industrial sources include petrochemical plants, coke oven plants, and kraft paper mills (CARB, 2022b).

- **Vinyl Chloride**, or chloroethene, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used in the process of making polyvinyl chloride (PVC) plastic and vinyl products, thus may be emitted from industrial processes. Vinyl chloride has been detected near landfills, sewage treatment plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents, although levels above the standard have not been measured in California since the 1970's. Today, vinyl chloride exposure is primarily an occupational concern (CARB, 2022c).
- **Visibility Reducing Particles** impact the environment by decreasing visibility (haze). These particles vary greatly in shape, size, and chemical composition, and come from a variety of natural and manmade sources. Some haze-causing particles are directly emitted to the air such as windblown dust and soot. Others are formed in the air from the chemical transformation of gaseous pollutants (e.g., sulfates, nitrates, organic carbon particles) which are the major constituents of fine PM (CARB, 2022d).

Common criteria air pollutants, such as ozone precursors, SO<sub>2</sub>, and PM, are emitted by a large number of sources and have effects on a regional basis (i.e., throughout the SFBAAB). Other pollutants, such as hazardous air pollutants (HAPs; described in more detail below under "Toxic Air Contaminants"), toxic air contaminants (TACs; described in more detail below), and fugitive dust, are generally not as prevalent and/or emitted by fewer and more specific sources.

#### 6.1.4 Ambient Air Quality Standards and Basin Attainment Status

In general, the NAAQS and CAAQS define "clean" air, and are established at levels designed to protect the health of the most sensitive groups in our communities by defining the maximum amount of a pollutant (averaged over a specified period of time) that can be present in outdoor air without any harmful effects on people or the environment. Air pollutant levels are typically described in terms of concentration, which refers to the amount of pollutant material per volumetric unit of air. Concentrations are typically measured in parts per million (ppm) or micrograms per cubic meter (µg/m<sup>3</sup>).

The U.S. EPA, CARB, and regional air agencies assess the air quality of an area by measuring and monitoring the amount of pollutants in the ambient air and comparing pollutant levels against NAAQS and CAAQS. Based on these comparisons, regions are classified as one of the following categories.

- **Attainment.** A region is "in attainment" if monitoring shows ambient concentrations of a specific pollutant are less than or equal to the NAAQS or CAAQS. In addition, an area that has been re-designated from nonattainment to attainment is classified as a "maintenance area" for 10 years to ensure that the air quality improvements are sustained.
- **Nonattainment.** If the NAAQS or CAAQS are exceeded for a pollutant, the region is designated as nonattainment for that pollutant. It is important to note that some NAAQS and CAAQS require multiple exceedances of the standard in order for a region to be classified as nonattainment. Federal and State laws require nonattainment areas to develop strategies, implementation plans, and control measures to reduce pollutant concentrations to levels that meet, or attain, standards.
- **Unclassified.** An area is unclassified if the ambient air monitoring data are incomplete and do not support a designation of attainment or nonattainment.

Table 6-1 lists the NAAQS and CAAQS and summarizes the SFBAAB's attainment status.

**Table 6-1:  
Ambient Air Quality Standards And Sfaab Basin Attainment Status**

Pollutant	Averaging Time(B)	California Standards(A)		National Standards(A)	
		Standard(C)	Attainment Status(D)	Standard(C)	Attainment Status(D)
Ozone	1-Hour	180 µg/m <sup>3</sup>	Nonattainment	–	–
	8-Hour	137 µg/m <sup>3</sup>	Nonattainment	137 µg/m <sup>3</sup>	Nonattainment
PM <sub>10</sub>	24-Hour	50 µg/m <sup>3</sup>	Nonattainment	150 µg/m <sup>3</sup>	Unclassifiable
	Annual Average	20 µg/m <sup>3</sup>	Nonattainment	–	–
PM <sub>2.5</sub>	24-Hour	–	–	35 µg/m <sup>3</sup>	Nonattainment <sup>(D)</sup>
	Annual Average	12 µg/m <sup>3</sup>	Nonattainment	12 µg/m <sup>3</sup>	Attainment
Carbon Monoxide	1-Hour	23,000 µg/m <sup>3</sup>	Attainment	40,000 µg/m <sup>3</sup>	Attainment
	8-Hour	10,000 µg/m <sup>3</sup>	Attainment	10,000 µg/m <sup>3</sup>	Attainment
Nitrogen Dioxide	1-Hour	339 µg/m <sup>3</sup>	Attainment	188 µg/m <sup>3</sup>	Unclassifiable
	Annual Average	57 µg/m <sup>3</sup>	–	100 µg/m <sup>3</sup>	Attainment
Sulfur Dioxide	1-Hour	655 µg/m <sup>3</sup>	Attainment	196 µg/m <sup>3</sup>	Attainment
	24-Hour	105 µg/m <sup>3</sup>	Attainment	–	–
Lead	3-Months Rolling	–	–	0.15 µg/m <sup>3</sup>	Attainment
Hydrogen Sulfide	1-Hour	42 µg/m <sup>3</sup>	Unclassifiable	–	–
Sulfates	24-Hour	25 µg/m <sup>3</sup>	Attainment	–	–
Vinyl Chloride	24-Hour	26 µg/m <sup>3</sup>	–	–	–

Source: BAAQMD 2017b, U.S. EPA 2022a modified by MIG.

- A. This table summarizes the CAAQS and NAAQS and the Basin's attainments status. This table does not prevent comprehensive information regarding the CAAQS and NAAQS. Each CAAQS and NAAQS has its own averaging time, standard unit of measurement, measurement method, and statistical test for determining if a specific standard has been exceeded. Standards are not presented for visibility reducing particles, which are not concentration-based. The Basin is unclassified for visibility reducing particles.
- B. Ambient air standards have changed over time. This table presents information on the standards previously used by the U.S. EPA for which the Basin does not meet attainment.
- C. All standards are shown in terms of micrograms per cubic meter (µg/m<sup>3</sup>) rounded to the nearest whole number for comparison purposes (with the exception of lead, which has a standard less than 1 µg/m<sup>3</sup>). The actual CAAQS and NAAQS standards specify units for each pollutant measurement.
- D. On January 2013, the U.S. EPA issued a final rule to determine the Bay Area attains the 24-hour PM<sub>2.5</sub> national standard. This EPA rule suspends key State Implementation Plan (SIP) requirements as long as monitoring data continue to show that the Bay Area attains the standard. Despite this EPA action, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour PM<sub>2.5</sub> standard until such time as the Air District submits a "redesignation request" and a "maintenance plan" to EPA, and EPA approves the proposed redesignation.

### 6.1.5 Toxic Air Contaminants

In addition to criteria air pollutants, the U.S. EPA and CARB have classified certain pollutants as hazardous air pollutants (HAPs) or toxic air contaminants (TACs), respectively. The U.S. EPA has identified 187 HAPs, including substances such as benzene and formaldehyde; CARB also considers particulate emissions from diesel-fueled engines and other substances to be TACs. Since CARB's list of TACs references and includes U.S. EPA's list of HAPs, this EIR uses the term TAC when referring to HAPs and TACs.

TACs can cause severe health effects at very low concentrations (non-cancer effects), and many are suspected or confirmed carcinogens (i.e., can cause cancer) (U.S. EPA 2020b, CARB

2020b). People exposed to TACs at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects such as (but not limited to) reduce immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and/or other health problems (U.S. EPA 2020b, CARB 2020b).

A description of the TACs associated with the proposed Project and its vicinity is provided below.

- **Diesel Particulate Matter (DPM).** Diesel engines emit both gaseous and solid material; the solid material is known as DPM. Almost all DPM is less than 1  $\mu\text{m}$  in diameter, and thus is a subset of  $\text{PM}_{2.5}$ . DPM is typically composed of carbon particles and numerous organic compounds. Diesel exhaust also contains gaseous pollutants including VOCs and  $\text{NO}_x$ . The primary sources of diesel emissions are ships, trains, trucks, rail yards and heavily traveled roadways. These sources are often located near highly populated areas, resulting in greater DPM related health consequences in urban areas. The majority of DPM is small enough to be inhaled into the lungs, and the particles that are not exhaled can be deposited on the lung surfaces and in the deepest regions of the lungs where they are most susceptible to injury. In 1998, CARB identified DPM as a toxic air contaminant based on evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM also contributes to the same non-cancer health effects as  $\text{PM}_{2.5}$  exposure (CARB, 2016b).

#### 6.1.6 Local Air Quality Conditions

The BAAQMD maintains a comprehensive air quality monitoring network consisting of over 30 stations distributed among the nine Bay Area counties in its jurisdiction. Table 6-2 shows the three most recent years' worth of data from the monitor located on 4<sup>th</sup> Street in San Rafael, in the southeast portion of Marin County. San Rafael is the largest city in Marin County. The San Rafael station monitors  $\text{O}_3$ ,  $\text{NO}_x$ , CO,  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$ , and Toxics.<sup>3</sup>

As shown in Table 6-2, air quality conditions have generally improved or remained about the same over the 2017 to 2019 time period:

- Ozone concentrations generally increased from 2017 to 2019. Ozone exceedances for the state and federal 8-hour standards and state 1-hour standard increased from none in 2017 and 2018 to 1 in 2019.
- $\text{PM}_{2.5}$  concentrations increased from 2017 to 2018 and decreased in 2019 to levels below both 2017 and 2018 concentrations. NAAQS exceedances increased from 2017 to 2018, but there were zero exceedances in 2019.
- $\text{PM}_{10}$  concentrations increased from 2017 to 2018 and decreased in 2019 to levels below both 2017 and 2018 concentrations. State standards were exceeded twice in 2017 and once

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<sup>3</sup>San Rafael was chosen by the BAAQMD for air monitoring, because it is the largest city in Marin County. San Rafael's climate and air quality are representative of that found throughout the populous eastern side of the county. Afternoon sea breezes typically keep pollution levels low. However, when the sea breeze is absent, local sources can cause elevated pollution levels (BAAQMD 2019b)

in 2018, and federal standards were exceeded twice in 2018. There were no CAAQS or NAAQS exceedances in 2019.

- CO and NO<sub>2</sub> had zero NAAQs or CAAQS exceedances from 2017-2019.

**Table 6-2:  
Local Air Quality Conditions 2017-2019**

<b>Pollutant</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>Ozone</b>			
Maximum 1-hour Concentration (ppm)	0.088	0.072	0.096
Maximum 8-hour Concentration (ppm)	0.063	0.053	0.080
Number of days exceeding State 1-hr standard	0	0	1
Number of days exceeding State 8-hr standard	0	0	1
Number of days exceeding Federal 8-hr standard	0	0	1
<b>Carbon Monoxide</b>			
Maximum 1-hour Concentration (ppm)	2.6	2.0	1.4
Maximum 8-hour Concentration (ppm)	1.6	1.6	0.9
Number of days national/state standard exceeded	0	0	0
<b>Fine Particulate Matter (PM<sub>2.5</sub>)</b>			
Maximum 24-hour Concentration (µg/m <sup>3</sup> )	74.7	167.6	19.5
Number of days exceeding Federal 24-hr standard	8	13	0
<b>Respirable Particulate Matter (PM<sub>10</sub>)</b>			
Maximum 24-hour Concentration (µg/m <sup>3</sup> ) (California)	94	166	33
Number of days State 24-hr standard exceeded	2	1	0
Number of days Federal 24-hr standard exceeded	0	2	0
<b>Nitrogen Dioxide</b>			
Maximum 1-hour Concentration (ppm)	0.053	0.055	0.0050
Annual Average Concentration (ppm)	0.010	0.009	0.008
Number of days exceeding State 1-hour standard	0	0	0
Number of days exceeding Federal 1-hour standard	0	0	0

Source: BAAQMD 2018, 2019c, 2020

In addition to the air quality monitor in San Rafael, the BAAQMD maintains two other air quality monitoring stations in Marin County. The Forest Knolls monitoring station is located at 6 Castro Street, in Forest Knolls, and the Fort Cronkhite is located at Building 1111 at Fort Cronkhite, in Sausalito. The Forest Knolls monitoring station was chosen by the BAAQMD for monitoring black carbon due to community interest about wood smoke in the San Geronimo Valley and to better understand and characterize the wood smoke source category in sheltered valley locations where winter wood burning often is the primary source of home heating. The Fort Cronkhite monitoring station was chosen by the BAAQMD for monitoring of background levels of VOC toxics compounds transported into the Bay Area from the Pacific Ocean due to prevailing westerly winds. The site is 0.5 miles east of the Pacific Ocean, on the north side of the Golden Gate gap which opens into San Francisco Bay. The monitor is located within the Golden Gate National Recreation Area near the visitor center at Fort Cronkhite. Low concentrations of toxics from this site provide a baseline to compare other toxics measurements in the Bay Area (BAAQMD 2019b). There are no other active air quality monitoring stations maintained in Marin County by the BAAQMD or CARB.

### 6.1.7 Sensitive Receptors

Some people are more affected by air pollution than others. The BAAQMD defines sensitive receptors as “facilities or land uses that include members of the population that are particularly



sensitive to the effects of air pollutants, such as children, the elderly and people with illnesses” (BAAQMD 2017a). In general, children, senior citizens, and individuals with pre-existing health issues, such as asthmatics, are considered sensitive receptors. Both CARB and the BAAQMD consider schools, schoolyards, parks and playgrounds, daycare facilities, nursing homes, hospitals, and residential areas as sensitive air quality land uses and receptors (BAAQMD 2017a, CARB 2005).

In general, sensitive air quality receptors in the Project Area include:

- Existing low-, medium-, and high-density residential receptors within the county;
- Existing schools, and education or institutional facilities; and
- Existing parks and recreational facilities

### **Existing Air Pollution-Related Health Risks**

Common sources of TAC emissions in the SFBAAB include gasoline stations, dry cleaners, diesel-fueled generators and pumps, other stationary sources (e.g., refineries), and mobile sources such as cars and trucks travelling on roads and freeways, and construction equipment, ships, and trains.

Publicly available data from CARB indicates there are 330 facilities in the Project Area that report emissions pursuant to AB 2588 (CARB, 2019). Please see Appendix C for a full list of emissions and risks from the facilities, as provided by the CARB database. In addition, the BAAQMD has identified San Rafael as an impacted community under its Community Air Risk Evaluation (CARE) program (BAAQMD 2021).

According to CalEnviroScreen, there are no disadvantaged communities within Marin County.<sup>4</sup>

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<sup>4</sup>CalEnviroScreen is a mapping tool that helps identify California communities that are most affected by many sources of pollution, and where people are often especially vulnerable to pollution's effects. The CalEnviroScreen model is made up of four components – two pollution burden components (exposures and environmental effects) and two population characteristics components (sensitive populations and socioeconomic factors). The four components are further divided into 20 indicators. An indicator is a measure of either environmental conditions, in the case of pollution burden indicators, or health and vulnerability factors, in the case of population characteristic indicators. According to the OEHHA CalEnviroScreen 4.0 Map, the Planning Area generally includes census tracts 6041101100, 6041101200, 6041102100, 6041102202, 6041102203, 6041103100, 6041104200, 6041104300, 6041106001, 6041106002, 6041107000, 6041108100, 6041109001, 6041110200, 6041111000, 6041112100, 6041112202, 6041114200, 6041115000, 6041119100, 6041119202, 6041120000, 6041121100, 6041121100, 6041121200, 6041123000, 6041124100, 6041124200, 6041128100, 6041129000, 6041130201, 6041130202, 6041131100, 6041132100, and 6041133000 (OEHHA, 2021b). The census tract with the highest scores is 6041112202, which is located in eastern Marin County and which is in the 71<sup>st</sup> percentile based on the CalEnviroScreen indicators (exposure, environmental effects, population characteristics, socioeconomic factors). Each census tract in Marin County scores below CalEnviroScreen's 75<sup>th</sup> percentile, so they are not considered disadvantaged communities as defined by Senate Bill (SB) 535 (OEHHA 2021b).

## 6.2 REGULATORY FRAMEWORK

### 6.2.1 Federal

**Federal Clean Air Act.** The Federal Clean Air Act, as amended, provides the overarching basis for both federal and state air pollution prevention, control, and regulation. The Act establishes the U.S. EPA's responsibilities for protecting and improving the nation's air quality. The U.S. EPA oversees federal programs for setting air quality standards and designating attainment status, permitting new and modified stationary sources of pollutants, controlling emissions of hazardous air pollutants, and reducing emissions from motor vehicles and other mobile sources. In 1971, to achieve the purposes of Section 109 of the CAA, the EPA developed primary and secondary NAAQS. Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and public welfare from air pollutants in the atmosphere.

The U.S. EPA requires each state prepare and submit a State Implementation Plan (SIP) that consists of background information, rules, technical documentation, and agreements that an individual state will use to attain compliance with the NAAQS within federally-imposed deadlines. State and local agencies implement the plans and rules associated with the SIP, but the rules are also federally enforceable.

### 6.2.2 State

**California Clean Air Act.** In addition to being subject to Federal requirements, air quality in the state is also governed by more stringent regulations under the California Clean Air Act, which was enacted in 1988 to develop plans and strategies for attaining the CAAQS. As discussed above, in California, both the Federal and State Clean Air acts are administered by CARB. CARB oversees the functions of local air pollution control districts and air quality management districts, which in turn administer air quality activities at the regional level.

**In-Use Off-Road Diesel Equipment Program.** CARB's In-Use Off-Road Diesel Equipment regulation is intended to reduce emissions of NO<sub>x</sub> and PM from off-road diesel vehicles, including construction equipment, operating within California. The regulation imposes limits on idling; requires reporting equipment and engine information and labeling all vehicles reported; restricts adding older vehicles to fleets; and requires fleets to reduce their emissions by retiring, replacing, or repowering older engines or installing exhaust retrofits for PM. The requirements and compliance dates of the off-road regulation vary by fleet size, and large fleets (fleets with more than 5,000 horsepower) must meet average targets or comply with Best Available Control Technology requirements beginning in 2014. CARB has off-road anti-idling regulations affecting self-propelled diesel-fueled vehicles 25 horsepower and up. The off-road anti-idling regulations limit idling on applicable equipment to no more than five minutes, unless exempted due to safety, operation, or maintenance requirements.

**On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation.** CARB's On-Road Heavy-Duty Diesel Vehicles (In-Use) regulation (also known as the Truck and Bus Regulation) is intended to reduce emission of NO<sub>x</sub>, PM, and other criteria pollutants generated from existing on-road diesel vehicles operating in California. The regulation applies to nearly all diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds that are privately or federally owned, and for privately and publicly owned school buses. Heavier trucks and buses with a GVWR greater than 26,000 pounds must comply with a schedule by engine model year or owners can report to show compliance with more flexible options. Fleets

complying with the heavier trucks and buses schedule must install the best available PM filter on 1996 model year and newer engines, and replace the vehicle 8 years later. Trucks with 1995 model year and older engines had to be replaced starting in 2015. Replacements with a 2010 model year or newer engine meet the final requirements, but owners can also replace the equipment with used trucks that have a future compliance date (as specified in regulation). By 2023, all trucks and buses must have at least 2010 model year engines with few exceptions.

**CARB Stationary Diesel Engines – Emission Regulations.** In 1998, CARB identified DPM as a TAC. To reduce public exposure to DPM, in 2000, the Board approved the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Risk Reduction Plan). Integral to this plan is the implementation of control measures to reduce DPM such as the control measures for stationary diesel-fueled engines. As such, diesel generators must comply with regulations under CARB’s amendments to Airborne Toxic Control Measure for Stationary Compression Ignition Engines and be permitted by BAAQMD.

**CARB Air Quality and Land Use Handbook.** CARB’s Air Quality and Land Use Handbook is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process (CARB, 2005). The CARB Handbook recommends that planning agencies consider proximity to air pollution sources when considering new locations for “sensitive” land uses, such as residences, medical facilities, daycare centers, schools, and playgrounds. Air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners, and large gasoline service stations. Key recommendations in the Handbook relative to the Project Area include taking steps to consider or avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day;
- Within 300 feet of gasoline fueling stations; or
- Within 300 feet of dry cleaning operations (dry cleaning with TACs is being phased out and will be prohibited in 2023).

CARB prepared a technical supplement to the Handbook, a Technical Advisory on Strategies to Reduce Air Pollution Exposure Near High Volume Roadways (CARB 2017b), that provides recommendations for strategies to minimize exposure of the public to air pollutants due to proximity to high volume roadways.

**Air Toxics “Hot Spots” Program.** State requirements specifically address emissions of air toxics through Assembly Bill (AB) 1807 (known as the Tanner Bill) that established the State Air Toxics “Hot Spots” Program and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588) (California Health and Safety Code Section 44300 et seq.). Under the Air Toxics Hot Spots Information and Assessment Act of 1987 (or Air Toxics “Hot Spots” Act) and Air Toxics Hot Spots Program, the State (CARB) must collect data on toxic emissions from stationary sources (facilities) throughout the State and ascertain potential health risks that these emissions pose to members of community for developing cancer or for resulting in non-cancer health effects. California’s Children’s Environmental Health Protection Act of 1999 (California Health and Safety Code Section 39606), also requires explicit consideration of infants and children in assessing risks from air toxics.

Substances regulated under California's Air Toxics Hot Spots Program are defined in statute and include a list of substances developed by the following sources:

- International Agency for Research on Cancer (IARC);
- U.S. EPA;
- U.S. National Toxicology Program (NTP);
- CARB Toxic Air Contaminant Identification Program List;
- Hazard Evaluation System and Information Service (HESIS) (State of California);
- Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986) list of carcinogens and reproductive toxicants (State of California); and
- Any additional substance recognized by the State Board as presenting a chronic or acute threat to public health when present in the ambient air.

### 6.2.3 Regional

CARB divides the state into 15 air basins based on geographic and meteorological features. One or more local air districts administer air quality management within each basin. These air districts develop local air quality/pollutant regulations and prepare air quality plans that set goals and measures for achieving attainment with ambient air quality standards. The districts also develop emission inventories, collect air monitoring data, and perform dispersion modeling simulations to establish strategies to reduce emissions and improve air quality. Local air regulations and air quality plans include measures to reduce air pollutant emissions from industrial facilities, commercial processes, motor vehicles, and other sources.

**Bay Area Air Quality Management District.** The BAAQMD is the agency primarily responsible for maintaining air quality and regulating emissions of criteria and toxic air pollutants within the SFBAAB. The BAAQMD carries out this responsibility by preparing, adopting, and implementing plans, regulations, and rules that are designed to achieve attainment of state and national air quality standards. The BAAQMD currently has 14 regulations containing more than 100 rules that control and limit emissions from sources of pollutants. Table 6-3 below presents the major BAAQMD rules and regulation that may apply to future development projects in the Project Area.

On April 29, 2017, the BAAQMD adopted its Spare the Air-Cool the Climate 2017 Clean Air Plan (2017 Clean Air Plan). The 2017 Clean Air Plan updates the most recent Bay Area ozone plan, the 2010 Clean Air Plan, in fulfillment of state ozone planning requirements. The Plan focuses on the three following goals:

- Attain all state and national quality standards;
- Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and
- Reduce Bay Area GHG Emissions to 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050.

The 2017 Clean Air Plan includes 85 control measures to help the region reduce air pollutants and has a long-term strategic vision which forecasts what a clean air Bay Area will look like in the year 2050. The control measures aggressively target the largest source of GHG, ozone pollutants, and particulate matter emissions – transportation. The 2017 Clean Air Plan includes more incentives for electric vehicle infrastructure, off-road electrification projects such as Caltrain and shore power at ports, and reducing emissions from trucks, school buses, marine vessels, locomotives and off-road equipment.

**Table 6-3:  
Potentially Applicable BAAQMD Rules and Regulations**

<b>Regulation</b>	<b>Rule</b>	<b>Description</b>
1 – General Provisions and Definitions	1 – General Provisions and Definitions	301 – Public Nuisance: Establishes that no person shall discharge quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number or person or the public; or which endangers the comfort, repose, health or safety of any such person or the public.
2 – Permits	2 – New Source Review	Provides for the review of new and modified sources of pollutants; requires use of Best Available Control Technology and emissions offsets to achieve no net increase in nonattainment pollutants; implements Prevention of Significant Deterioration review for attainment pollutants.
2 – Permits	5 – New Source Review of Toxic Air Contaminants	Provides for the review of new and modified sources of toxic air contaminants; requires use of Best Available Control Technology for sources that have a risk above certain thresholds and limits total project risks to 10.0 in a million cancer risk, 1.0 chronic hazard index, and 1.0 acute hazard index.
2 – Permits	6 – Major Facility Review	Provides for the review and issuance of operating permits for facilities that have the potential to emit 100 tons per year or more of any regulated air pollutant, 10 tons per year of a single hazardous air pollutant, and 25 tons per year or more of combined hazardous air pollutants.
6 – Particulate Matter	1 – General Requirements	Limits visible particulate matter emissions.
7 – Odorous substances	Odorous Substances	Establishes general limitations on odorous substances and specific emission limitations on certain odorous compounds, such as ammonia.
9 – Inorganic Gaseous Pollutants	8 – NOx and CO from Stationary Internal Combustion Engines	Limits emissions of NOx and CO from stationary internal gas combustion engines more than 50 brake horsepower.
11 – Hazardous Pollutants	2 – Asbestos Demolition, Renovation, and Manufacturing	Controls emissions of asbestos to the atmosphere during demolition.

Source: BAAQMD 2022b

In addition to its rules and regulations and the 2017 Clean Air Plan, the BAAQMD also maintains CEQA thresholds of significance that can assist Lead Agencies in assessing air quality impacts associated with proposed projects and plans. The BAAQMD's CEQA air quality thresholds of significance are discussed in more detail under Section 6.3.1.

#### 6.2.4 Local

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) contains the following policies and programs related to air quality and the proposed Project:

##### **Built Environment Element –Atmosphere and Climate policies**

- Policy AIR-1.1: Coordinate Planning and Evaluation Efforts. Coordinate air quality planning efforts with local, regional, and State agencies, and evaluate the air quality impacts of proposed plans and development projects.
- Policy AIR-1.2: Meet Air Quality Standards. Seek to attain or exceed the more stringent of federal or State Ambient Air Quality Standards for each measured pollutant.
- Policy AIR-1.3 Require Mitigation of Air Quality Impacts. Require projects that generate potentially significant levels of air pollutants, such as quarry, landfill operations, or large construction projects, to incorporate best available air quality mitigation in the project design.
- Policy AIR-2.1: Buffer Emission Sources and Sensitive Land Uses. Consider potential air pollution and odor impacts from land uses that may emit pollution and/or odors when locating (a) air pollution sources, and (b) residential and other pollution-sensitive land uses in the vicinity of air pollution sources (which may include freeways, manufacturing, extraction, hazardous materials storage, landfill, food processing, wastewater treatment, and other similar uses).
- Policy AIR-3.1: Institute Transportation Control Measures. Support a transportation program that reduces vehicle trips, increases ridesharing, and meets or exceeds the Transportation Control Measures recommended by BAAQMD in the most recent Clean Air Plan to reduce pollutants generated by vehicle use.
- Implementing Program AIR-1.a: Inform Local and Regional Agencies. Notify local and regional jurisdictions of proposed projects in unincorporated areas that may affect regional air quality, as identified by project type and size thresholds in the BAAQMD CEQA Guidelines, Assessing the Air Quality Impacts of Projects and Plans.
- Implementing Program AIR-1.b: Evaluate Air Quality Impacts of Proposed Projects and Plans. As part of the Environmental Review Process, use the current BAAQMD CEQA Guidelines to evaluate the significance of air quality impacts from projects or plans, and to establish appropriate minimum submittal and mitigation requirements necessary for project or plan approval.
- Implementing Program AIR-1.c: Take Part in Regional Programs. Continue to participate in the Cities for Climate Protection and Spare the Air programs.
- Implementing Program AIR-1.d: Cooperate to Enforce Air Quality Standards. Cooperate with the U.S. Environmental Protection Agency (EPA), the California Air Resources Board, and the BAAQMD to measure air quality at emission sources (including transportation corridors) and to enforce the provisions of the Clean Air Act and State as well as regional policies and established standards for air quality.

- Implementing Program AIR-1.e: Conduct Public Education Program. Educate regarding the reason for requiring using best management practices to improve air quality.
- Implementing Program AIR-1.f: Limit Residential Wood Burning. Continue to implement the ordinance that phases out the use of older, polluting wood-burning appliances and limits the installation of wood-burning devices in new or renovated homes to pellet stoves, EPA-certified woodstoves and fireplace inserts, or natural gas or propane appliances.
- Implementing Program AIR-1.g: Require Control Measures for Construction and Agricultural Activity. Require reasonable and feasible measures to control particulate emissions (PM-10 and PM-2.5) at construction sites and during agricultural tilling activity, pursuant to the recommendations in the BAAQMD CEQA Guidelines, which may include the following:
  - Watering active construction or agricultural tilling areas.
  - Covering hauled materials.
  - Paving or watering vehicle access roads.
  - Sweeping paved and staging areas.
- Implementing Program AIR-2.a: Require Separation Between Air Pollution Sources and Other Land Uses. Only allow (a) emission sources or (b) other uses in the vicinity of air pollution or odor sources if the minimum screening distances between sources and receptors established in the BAAQMD CEQA Guidelines can be met, unless detailed project-specific studies demonstrate compatibility with adjacent uses despite separations that do not meet the screening distance requirements.
- Implementing Program AIR-2.b: Protect Sensitive Receptors Near High-Volume Roadways. Amend the Development Code to require mitigation measures such as increased indoor air filtration to ensure the protection of sensitive receptors (facilities where individuals are highly susceptible to the adverse effects of air pollutants, such as housing, child care centers, retirement homes, schools, and hospitals) near freeways, arterials, and other major transportation corridors.
- Implementing Program AIR-2.c: Health Risk Analysis for Sensitive Receptors. Environmental review for applications for new projects involving locating sensitive receptors near roadways and stationary sources identified as posing potentially significant TAC or PM<sub>2.5</sub> exposure using BAAQMD CEQA Analysis Tools, shall include an analysis of the potential health risks. Mitigation measures that achieve compliance with adopted standards of the BAAQMD for exposure of sensitive receptors to odor/toxics shall be identified in order to reduce these risks to acceptable levels.
- Implementing Program AIR-3.a: Support Voluntary Employer-Based Trip Reduction. Provide assistance to regional and local ridesharing organizations, and advocate legislation to maintain and expand employer ridesharing incentives, such as tax deductions or credits.

- Implementing Program AIR-3.b: Utilize Clean Vehicle Technology. Promote new technologies and other incentives, such as allowing zero or partial zero emission vehicles rated at 45 miles or more per gallon in Marin County carpool lanes, and replacing fleet vehicles with these and similar clean vehicles.
- Implementing Program AIR-3.c: Consider Model Clean Vehicle Requirements. Research and consider adoption of an ordinance or standards that provide a set of voluntary measures to incorporate clean vehicles in fleets and promote the use of clean alternative fuels.
- Implementing Program AIR-3.d: Reduce Peak-Hour Congestion. Implement recommended Bay Area Air Quality Management District (BAAQMD) Transportation Control Measures in the Clean Air Plan to reduce vehicle emissions and congestion during peak commute periods.
- Implementing Program AIR-3.e: Improve Arterial Traffic Management. Modify arterial roadways to allow more-efficient bus operation, including possible signal preemption, and expand signal-timing programs where air quality benefits can be demonstrated.

**Marin County Development Code.** The Marin County Code of Ordinances §22.20.040, contains requirements for outdoor construction activities. Subsection C of County Code §22.20.040 requires the following fugitive dust control measures to be implemented for projects involving ground disturbance that are subject to environmental review:

1. All unpaved exposed surfaces (e.g., parking areas, staging areas, soil piles, and graded areas, and unpaved access roads) shall be watered two times a day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to a maximum of 15 miles per hour.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California of Regulations). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified emissions evaluator.

The fugitive dust control measures in County Code §22.20.040(C) are the same as those recommended by the BAAQMD for addressing project-level fugitive dust impacts during construction (see Section 6.3.1).



### 6.3 Impacts and Mitigation Measures

This section describes potential impacts related to conflicts with an applicable air quality plan, cumulatively considerable net increases of criteria pollutants for which the region is in nonattainment, exposure of sensitive receptors to substantial pollutant concentrations, and objectionable odors, which could result from the implementation of the Project and recommends mitigation measures as needed to reduce significant impacts. Where applicable, this analysis refers directly to the Housing Element Update or the Safety Element Update if the analysis/evaluation is relevant to only one component.

#### 6.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to air quality if it would:

- A. Conflict with or obstruct implementation of the applicable air quality plan;
- B. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard;
- C. Expose sensitive receptors to substantial pollutant concentrations; or
- D. Result in other emissions such as those leading to odors adversely affecting a substantial number of people.

The BAAQMD's CEQA Air Quality Guidelines contains guidance on assessing and mitigating both project- and plan-level air quality impacts (BAAQMD 2017a). Page 9-1 of the BAAQMD's guidelines states:

*"The term general and area plan refers broadly to discretionary planning activities which may include, but are not limited to the following: general plans, redevelopment plans, specific plans, area plans, community plans, congestion management plans, and annexations of lands and service areas. General and area plans are often subject to program-level analysis under CEQA, as opposed to project-level analysis. As a general principle, the guidance offered within [the BAAQMD's CEQA Air Quality Guidelines] should be applied to discretionary, program-level planning activities; whereas the project-level guidance offered in other chapters should be applied to individual project-specific approvals, such as a proposed development project.*

*Air quality impacts from future development pursuant to general or area plans can be divided into construction-related impacts and operational-related impacts. Construction-related impacts are associated with construction activities likely to occur in conjunction with future development allocated by the plan. Operational-related impacts are associated with continued and future operation of developed land uses, including increased vehicle trips and energy use."*

The proposed Project is a planning-level document that would authorize future development; however, the project-specific details of these future development proposals are not currently known and therefore impacts associated with the proposed Project are analyzed using the plan-level guidance contained in Chapter 9 of the BAAQMD CEQA Air Quality Guidelines. Whereas

the proposed Project provides the blueprint and basis for future land use decisions in the Project Area, individual future development projects supported by the project would be analyzed using the project-level guidance contained in Part II (Chapters 4 through 8) the BAAQMD CEQA Air Quality Guidelines. The BAAQMD’s plan-and project-level thresholds of significance are summarized in Table 6-4 and Table 6-5, respectively. The project-level thresholds are provided for informational purposes and to give context to the plan-level analysis presented in Section 6.3.3.

**Table 6-4:  
BAAQMD Plan-Level Thresholds of Significance**

<b>Pollutant</b>	<b>Threshold of Significance</b>
Criteria Air Pollutants and Precursor Emissions	Construction: None
	Operational: Consistency with current air quality plan and projected VMT or vehicle trip increase is less than or equal to projected population increase.
Local Community Risks and Hazards	Land use diagram identifies special overlay zones around existing and planned sources of TACs and PM <sub>2.5</sub> , including special overlay zones of at least 500 feet (or Air District-approved modeled distance) on each side of all freeways and high-volume roadways, and plan identifies goals, policies, and objectives to minimize potentially adverse impacts.
Odors	Identify locations of odor sources in plan; identify goals, policies, and objectives to minimize potentially adverse impacts.

Source: California Environmental Quality Act Air Quality Guidelines; BAAQMD, 2017

**Table 6-5:  
BAAQMD Project-Level Thresholds of Significance**

<b>Pollutant</b>	<b>BAAQMD Project-Level Threshold of Significance</b>		
	<b>Construction Emissions</b>	<b>Operational Emissions</b>	
	<b>Daily Emissions (pounds/day)</b>	<b>Daily Emissions (pounds/day)</b>	<b>Annual Emissions (tons per year)</b>
ROG	54	54	10
NO <sub>x</sub>	54	54	10
Exhaust PM <sub>10</sub>	82	82	15
Exhaust PM <sub>2.5</sub>	54	54	10
Fugitive Dust PM <sub>10</sub> /PM <sub>2.5</sub>	Best Management Practices	<i>None</i>	
Local CO	<i>None</i>	9.0 ppm (8-hour average) 20.0 ppm (1-hour average)	
Risks and Hazards – New Source/Receptor (Individual)	Compliance with Qualified Community Risk Reduction Plan; or Increased cancer risk of >10.0 in a million; and Increased non-cancer risk of >1.0 Hazard Index (chronic or acute); and Ambient PM <sub>2.5</sub> increase: >0.3µg/m <sup>3</sup> annual average		
Risks and Hazards – New Source/Receptor (Cumulative)	Compliance with Qualified Community Risk Reduction Plan; or Increased cancer risk of >100 in a million (from all local sources); and Increased non-cancer risk of >10.0 Hazard Index (from all local sources) (chronic); and Ambient PM <sub>2.5</sub> increase: >0.8µg/m <sup>3</sup> annual average (from all local sources)		

**Table 6-5:  
BAAQMD Project-Level Thresholds of Significance**

Pollutant	BAAQMD Project-Level Threshold of Significance		
	Construction Emissions	Operational Emissions	
	Daily Emissions (pounds/day)	Daily Emissions (pounds/day)	Annual Emissions (tons per year)
Accidental Release of Acutely Hazardous Pollutants	<i>None</i>	Storage or use of acutely hazardous materials locating near receptors or receptors locating near stored or used acutely hazardous materials considered significant	
Odors	<i>None</i>	Complaint History – 5 confirmed complaints per year averaged over three years	

Source: California Environmental Quality Act Air Quality Guidelines; BAAQMD, 2017

The County requires projects involving ground disturbance that are subject to environmental review to implement the BAAQMD fugitive dust best management practices through compliance with County Code §22.20.040 (C) (see “Marin County Code” under Section 6.2.4).

**6.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts**

Neither the Housing Element Update nor the Safety Element Update contain policies or implementing programs that specifically address air quality impacts.

**6.3.3 Impacts and Mitigations**

This section describes potential impacts related to air quality that could result from the proposed Project, and discusses components of the Project that would avoid or reduce those potential impacts. Where applicable, this analysis refers directly to the Housing Element Update or the Safety Element Update if the analysis/evaluation is relevant to only one component. The section also recommends mitigation as needed to reduce potentially significant impacts to less-than-significant levels.<sup>5</sup>

The air quality analysis presented below is based on the construction and operation of 10,993 dwelling units (candidate housing sites), which are more than the 5,214 dwelling units that would be facilitated by adoption of the Housing Element Update (project sites inventory), and the 3,569 dwelling units that are required by the Regional Housing Needs Allocation (RHNA). The air quality analysis’ assumptions, which provide a conservative assessment of potential impacts, are consistent with the land use and transportation modeling assumptions used in the Greenhouse Gas / Energy Chapter (Chapter 10), Noise Chapter (Chapter 15), and Transportation Chapter (Chapter 18)).

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<sup>5</sup>The proposed Project includes both the Housing Element Update and the Safety Element Update; however, only the land use designations authorized by adoption of the Housing Element Update would have the potential to generate long-term operational air quality emissions. Adoption of both the Housing and Safety Element Updates could result in construction activities and construction-related air quality emissions.

**Impact 6-1: Conflict with the Local Air Quality Plan and Result in a Cumulatively Considerable Net Increase in Criteria Air Pollutants for which the Region is Non-Attainment (Operational).** [Thresholds of Significance (a) and (b)] The residential growth that would be facilitated by the proposed Project would result in a projected increase in vehicle miles traveled (VMT) that exceeds the projected population increase and, therefore, could conflict with the BAAQMD 2017 Clean Air Plan, and result in a cumulatively considerable net increase in operational criteria air pollutants for which the region is non-attainment. This would be a *potentially significant impact*.

Consistent with the BAAQMD's CEQA Air Quality Guidelines, the proposed Project would result in a significant impact if it would be inconsistent with the 2017 Clean Air Plan or result in a projected increase in vehicle trips or VMT that exceeds a projected service population increase. As described below, the Project includes, and would be subject to, standards and guidelines that would generally be consistent with the 2017 Clean Air Plan. However, the Project would conflict with one control measure contained in the 2017 Clean Air Plan and would be inconsistent with the 2017 Clean Air Plan, because the growth proposed by the Housing Element Update would result in an increase in VMT that exceeds the projected increase in population. Therefore, the proposed Project would be inconsistent with the 2017 Clean Air Plan and could result in a cumulatively considerable net increase in criteria air pollutants for which the region is non-attainment.

The BAAQMD's CEQA Guidelines recommend a lead agency analyze consistency with the 2017 Clean Air Plan using the following three questions:

- 1) Does the project support the primary goals of the Air Quality Plan?
- 2) Does the project include applicable control measures from the Air Quality Plan?
- 3) Does the project disrupt or hinder implementation of any Air Quality Plan control measures?

The BAAQMD's 2017 Clean Air Plan is a multi-pollutant plan focused on protecting public health and the climate. Specifically, the primary air quality-related goals of the 2017 Clean Air Plan (Consistency Question 1) are to:<sup>6</sup>

- Goal 1: Attain all state and national air quality standards; and
- Goal 2: Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants.

According to the BAAQMD CEQA Guidelines, to meet the thresholds of significance for operational-related criteria air pollutant and precursor impacts for plans (i.e., attain state and air

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<sup>6</sup>In addition to the two goals identified in this Chapter, the 2017 Clean Air Plan includes a third primary goal related to Bay Area greenhouse gas (GHG) emissions. For the purposes of this EIR, consistency with the 2017 Clean Air Plan's goal related to GHG emissions is considered and evaluated separately in EIR Chapter 10 (Greenhouse Gas Emissions and Energy).

quality standards per Consistency Question 1, Goal 1), a proposed plan must satisfy the following criteria:

- Criteria 1: Consistency with current air quality plan control measures; and
- Criteria 2: A proposed plan's projected VMT or vehicle trips increase is less than or equal to its projected population increase.

Based on the preceding discussion of the criteria needed to meet the BAAQMD thresholds of significance for plan-level documents, the following analysis is organized as such:

1. Consistency with Air Quality Plan Control Measures. This section addresses:
  - Consistency Question 1 (Primary Goals of Air Quality Plan): Goal 1 – Attain Air Quality Standards, Criteria 1 (Applicable Control Measures)
  - Consistency Question 2 (Include Applicable Control Measures from Air Quality Plan)
2. Disrupt or Hinder Implementation of Air Quality Plan Control Measures. This section addresses:
  - Consistency Question 3 (Disrupt or Hinder Implementation of Air Quality Plan)
3. Increases in Vehicle Trips and Service Population. This section addresses:
  - Consistency Question 1 (Primary Goals of Air Quality Plan): Goal 1 – Attain Air Quality Standards, Criteria 2 (Vehicle Trips and Population Growth)
4. Eliminate Health Risk Disparities Among Bay Area Communities. This section addresses:
  - Consistency Question 1 (Primary Goals of Air Quality Plan): Goal 2 – Eliminate Health Risk Disparities Among Bay Area Communities

### **1. Consistency with Air Quality Plan Control Measures**

The 2017 Clean Air Plan contains 85 control strategies designed to reduce ozone precursors, protect public health, and serve as a regional climate protection strategy. The 85 control strategies identified in the 2017 Clean Air Plan are grouped by nine economic-based “sectors” as shown in Table 6-6.<sup>7</sup>

The BAAQMD's implementation of the control strategies employs a wide range of tools and resources, and many of the control strategies are not intended or designed to be achieved by local government. Table 6-7 identifies the 2017 Clean Air Plan control measures that are relevant to the proposed Project and summarizes how the Project would be either consistent or inconsistent with these measures.

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<sup>7</sup>The BAAQMD 2017 Clean Air Plan uses the same economic sectors contained in CARB's 2017 Climate Change Scoping Plan.

**Table 6-6:  
BAAQMD 2017 Clean Air Plan Control Measure Sectors**

<b>Sector</b>	<b>No. of Measures</b>	<b>General Description of Sector Applicability</b>
Agriculture (AG)	4	Applies to sources of air pollution from agricultural operations include on and off-road trucks and farming equipment, aircraft for crop spraying, animal waste, pesticide and fertilizer use, crop residue burning, travel on unpaved roads, and soil tillage.
Buildings (BL)	4	Applies to residential, commercial, governmental and institutional buildings, which generate emissions through energy use for heating, cooling, and operating the building, and from the materials used in building construction and maintenance.
Energy (EN)	2	Applies to emissions of criteria pollutants, TACs, and GHGs from electricity generated and used within the Bay area, as well as GHG emissions from electricity generated outside the Bay area that is imported and used within the region
Natural and Working Lands (NW)	3	Applies to emissions from natural and working lands, including forests, woodlands, shrub lands, grasslands, rangelands, and wetlands.
Stationary Sources (SS)	40	Applies to stationary sources generally used in commercial and industrial facilities. Such sources are typically regulated through BAAQMD rulemaking, permitting, and enforcement programs
Super GHGs (SL)	3	Applies to emissions of methane, black carbon, and fluorinated gases
Transportation (TR)	23	Applies to on-road motor vehicles such as light-duty automobiles or heavy-duty trucks, as well as off-road vehicles, including airplanes, locomotives, ships and boats, and off-road equipment such as airport ground-support equipment, construction equipment and farm equipment.
Waste (WA)	4	Applies to emissions from landfills and composting activities.
Water (WR)	2	Applies to direct emissions from the treatment of water and wastewater at publicly owned treatment works and indirect emissions associated with the energy used to pump, convey, recycle, and treat water and wastewater throughout the Bay

**Table 6-7:  
BAAQMD 2017 Clean Air Plan Control Measure Consistency**

Applicable 2017 Clean Air Plan Control Measures	Proposed Project Consistency
<b>Transportation Control Measures</b>	
TR2: Trip Reduction Programs	Consistent. The proposed Project reduces trips through the implementation of the policies described in Section 18.2.3, including CWP Policy TR-1.8, that call for reducing the rate of increase for total vehicle miles traveled by single-occupant automobiles such that they do not exceed the population growth rate. In addition, CWP Program TR-1.s calls for the County to develop and implement a program for monitoring and reducing VMT, and requires new developments specific transportation demand management (TDM) strategies for reducing the VMT below levels that would otherwise occur. CWP Program TR-1.s identifies strategies including increased transit, focusing residential development near transit, indicating that multi-family projects with 25 or more units should include TDM measures and provide connections to non-auto mode facilities. The County would also implement Mitigation Measure 18-4 that further sets forth requirements for new residential development projects such that they will achieve a VMT that is 15 percent below the regional average residential VMT per capita.
TR10: Land Use Strategies	Inconsistent. The Plan Bay Area 2050 Priority Development Areas (PDA) in Marin County are generally located in areas of incorporated communities (e.g., San Rafael) and not in unincorporated Marin County. Several parcels in Marin City are located in the Urbanized Corridor PDA. These sites are envisioned as being redeveloped with multifamily residential dwelling units, which is consistent with the goals of Plan Bay Area 2050; however, as described in Impact 10-1, the Housing Element Update would result in VMT growth that could impede the goals of Plan Bay Area 2050. Further, as discussed later in this impact discussion for Impact 6-1, VMT would grow at a faster rate than population (see Table 6-8). Thus, the proposed Project would not be consistent with Plan Bay Area 2050.
<b>Building Control Measures</b>	
BL1: Green Buildings	Consistent. New development facilitated by adoption of the proposed Housing Element Update would be subject to the County’s Green Building Requirements (see Table 10-5), which expand upon the mandatory statewide sustainable building practices identified in the CalGreen Code.
BL2: Decarbonize Buildings	Consistent. New development facilitated by adoption of the proposed Housing Element Update would be subject to the County’s Green Building Requirements, which set forth several energy efficiency options for new residential development. The first option is all all-electric design. The other two allow for mixed-fuel (i.e., some natural gas) but have an increased energy efficiency design requirement and stipulate that kitchens must be pre-wired to support future induction cooking. Project compliance with the County’s Green Building Requirements would support the long-term decarbonization of buildings.
<b>Waste Management Control Measures</b>	

**Table 6-7:  
BAAQMD 2017 Clean Air Plan Control Measure Consistency**

<b>Applicable 2017 Clean Air Plan Control Measures</b>	<b>Proposed Project Consistency</b>
WA4: Recycling and Waste Reduction	Consistent. New development facilitated by adoption of the proposed Project would meet the requirements of the CalGreen Code, which specifies at least 65 percent of nonhazardous construction and demolition waste be recycled or salvaged.
<b>Water Control Measures</b>	
WR2: Support Water Conservation	Consistent. New development facilitated by adoption of the proposed Housing Element Update would be required to comply with the requirements of the CalGreen Code, which sets forth maximum flow rates for water fixtures, including showerheads, bathroom and kitchen faucets, and toilets.

As shown in Table 6-7, the proposed Project would be consistent with applicable control measures contained in the 2017 Clean Air Plan, except for TR10: Land Use Strategies, because it would conflict with Plan Bay Area 2050.

**2. Disrupt or Hinder Implementation of Clean Air Plan Control Measures**

As shown in Table 6-7, the proposed Project would be consistent with applicable 2017 Clean Air Plan control measures, except TR10: Land Use Strategies. While the proposed Project would generally not conflict with the 2017 Clean Air Plan control measures, it could conflict with one strategy and, therefore, hinder implementation of the 2017 Clean Air Plan.

**3. Vehicle Trips and Service Population Growth**

The BAAQMD CEQA Air Quality Guidelines recommend lead agencies evaluate the projected VMT or vehicle trips in relation to projected population increases when considering the adoption of a plan-level document. Specifically, that the projected VMT or vehicle trips are less than or equal to the projected population increase. Table 6-8 compares the potential increases in VMT and population under the proposed Project (2040) to the VMT and population conditions under the existing 2019 conditions and under 2040 No Project conditions.

**Table 6-8  
Project VMT and Population Increases**

<b>Year</b>	<b>Daily VMT</b>	<b>Population</b>
<b>2019 Existing Conditions Compared to 2040 Project Conditions</b>		
2019 Existing	1,821,199	66,888
2040 Project	2,429,627	90,170
Percent Increase	33.4%	34.8%
<b>2040 No Project Conditions Compared to 2040 Project Conditions</b>		
2040 No Project	1,851,823	72,029
2040 Project	2,429,627	90,170
Percent Increase	31.2%	25.2%

Source: Kittleson 2022.

As shown in Table 6-8, when comparing existing conditions to 2040 Project conditions, there would be a slightly greater increase in population than VMT, thereby meeting the BAAQMD's



threshold requirement of not having VMT increase at a greater rate than population; however, when comparing 2040 No Project conditions to 2040 Project conditions, daily VMT would increase at a greater rate than population. Having daily VMT increase at a greater rate than the population would be inconsistent with BAAQMD plan-level criteria for assessing long-term operational air quality impacts. The comparison of 2040 No Project conditions to 2040 Project conditions provides a more accurate portrayal of how the proposed Project could affect the environment over the long-term and, therefore, is used for determining the significance of the proposed Housing Element Update's operational criteria air pollutant emissions. Because the proposed Housing Element Update would increase VMT at a rate greater than population, the Project could result in a cumulatively considerable net increase in ozone precursors, PM<sub>2.5</sub>, and PM<sub>10</sub>, pollutants for which the region is non-attainment.

As described in Chapter 18, Transportation, the proposed Project would have a significant and unavoidable impact with regard to VMT (see Impact 18-4); therefore, new residential development authorized by the proposed Housing Element Update would be subject to Mitigation Measure 18-4. Mitigation Measure 18-4 would help reduce VMT associated with new residential development facilitated by adoption of the Housing Element Update; however, it would only address the subset of VMT attributable to new residential development, which is not all of the VMT shown in Table 6-8, and there is uncertainty regarding how consistently the performance standards of Mitigation Measure 18-4 can be achieved. There is no additional mitigation that can be applied to the Project to reduce VMT associated with the development proposed by the Project. Therefore, the increases in daily VMT associated with the Project would remain greater than the increase in population, and the BAAQMD's criteria would not be met.

#### **4. Eliminate Disparities in Health Risks**

As described under Section 6.1, the proposed housing sites in the Project Area are shown to have CalEnviroScreen burden percentiles ranging from the 1<sup>st</sup> to 71<sup>st</sup> percentile, which indicate relatively low health risks in the Project Area compared to other areas of the state (i.e., none of the census tracts are considered disadvantaged under the SB 535 definition). The BAAQMD, however, has designated San Rafael and the land northeast of San Rafael as communities within the BAAQMD's CARE Program. Specifically, the San Rafael area is designated as a CARE community for 24-hour PM<sub>2.5</sub>. Although future development activities authorized by adoption of the Housing Element Update could result in potentially significant health risk increases during construction activities (see Impact 6-3), these emissions would not promote disparities, because the sites identified for potential development are located outside of the CARE Program area and would be sufficiently far away such that construction emissions would have ample time to disperse. Long-term operational emissions associated with development authorized by adoption of the Housing Element Update would also not promote disparities for the reasons discussed in Impact 6-4 (e.g., emissions would primarily come from gasoline-powered vehicles traveling throughout the county). The Housing Element Update identifies residential land uses; it does not include industrial or other land uses that have the potential to generate TAC emissions from large stationary sources or industrial processes. The Project Area is not located in or adjacent to a disadvantaged community, nor does it include land uses that would generate long-term, stationary sources of emissions that could promote disparities in health risks. The proposed Project would not increase health risk disparities in the Bay Area.

## **Conclusion**

The proposed Project would be inconsistent with one of the control measures identified in the 2017 Clean Air Plan related to Plan Bay Area 2050 and would result in VMT growth at a rate that is greater than the rate of population growth. The Project, therefore, could obstruct implementation of the 2017 Clean Air Plan and has the potential to generate a cumulative considerable net increase in criteria air pollutant emissions for which the region is non-attainment, including ozone precursors, PM<sub>2.5</sub>, and PM<sub>10</sub>, pursuant to BAAQMD plan-level assessment criteria. Mitigation Measure 6-1 would help to reduce VMT generated by the additional residential units identified in the Housing Element Update; however, it would not be enough to reduce this impact to less than significant. This impact would be **significant and unavoidable** despite the implementation of mitigation.

**Mitigation Measure 6-1: Reduce VMT from New Residential Development.** Implement Mitigation Measure 18-4 (Transportation).

**Mitigation Measure 18-4.** Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, OPR, 2018 (or subsequent updates), or future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments. For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a major role in most cases. Following are TDM and other strategies that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.

- Subsidize resident transit passes
- Provide or participate in established ride-matching program(s)
- Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator

**(continued)**

**Mitigation Measure 6-1 (continued):**

- Complete bus stop improvements or on-site mobility hubs
- Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit
- Reduce parking supply at affordable or senior projects and projects that are well-served by transit
- Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present
- Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)
- Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.

Even with implementation of this mitigation measure, this impact would remain ***significant and unavoidable***.

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**Impact 6-2: Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Construction).** [Threshold of Significance (b)] Construction activities authorized by the adoption of the proposed Project could generate a cumulatively considerable net increase in criteria air pollutant emissions for which the region is non-attainment. This would be a ***potentially significant impact***.

Future development authorized by the proposed Project would result in short-term construction-related criteria air pollutant emissions that have the potential to have an adverse effect on air quality. Although the site-specific details of future projects are not known at this time, construction activities associated with typical residential development can include demolition, site preparation, grading, building construction, paving, and architectural coating phases. These types of construction activities could generate emissions from the following sources:

- Gasoline- and diesel-fuel combustion in on- and off-site, heavy-duty construction equipment, worker vehicle trips, vendor vehicle trips, and haul truck trips generates emissions of ROG, NO<sub>x</sub>, CO, exhaust PM, and other pollutants. The age, type, amount, size, and activity hours of construction equipment use, as well as the associated number of workers, vendors, and haul trucks needed to construct a project, all influence the amount of exhaust emissions produced during construction.
- On- and off-site vehicle travel on paved and unpaved roads used to access the job site generates fugitive dust and PM emissions. The silt content, moisture level, vehicle

weight, and vehicle speed are factors that affect fugitive dust emissions from vehicle travel on paved and unpaved roads.

- Demolition and ground disturbance activities associated with grading, excavation, and other soil-disturbing activities also generate fugitive dust and PM emissions. Emissions that occur as a result of these activities not only occur during the active earth disturbance, but also while the materials are being deposited into haul trucks and transported to their final destinations. Similar to vehicle travel on unpaved roads, the soil moisture, wind speed, and volume of material moved affect potential fugitive dust emissions from earth moving activities.
- Surface coating and finishes (e.g., painting, waterproofing, etc.) generates ROG emissions from off-gassing/evaporation of pollutants.

It is possible that either no construction could be occurring at any given time, or multiple projects could be occurring within the Project Area simultaneously. The BAAQMD CEQA Air Quality Guidelines do not identify quantitative, plan-level thresholds for construction emissions; however, as shown in Table 6-5, the BAAQMD does identify project-level thresholds of 54 pounds per average day for NO<sub>x</sub>, ROG, and PM<sub>2.5</sub> exhaust, and 82 pounds per average day for PM<sub>10</sub> exhaust. The combination of fugitive dust and exhaust emissions of multiple projects occurring within the Project Area would very likely exceed these project-level thresholds; however, as provided in the BAAQMD Air Quality CEQA Guidelines:

*“In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project’s individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region’s existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary. The analysis to assess project-level air quality impacts should be as comprehensive and rigorous as possible” (BAAQMD 2017a).*

Although specific details regarding project development within the Project Area are not known at this time, it is reasonable to assume that one or more projects developed under implementation of the proposed Project could have the potential to exceed one or more of the BAAQMD’s construction criteria air pollutant thresholds of significance (e.g., NO<sub>x</sub> for a project involving a substantial amount of earthwork during grading). The County requires projects involving ground disturbance that are subject to environmental review to implement the BAAQMD fugitive dust best management practices through County Code §22.20.040 (C) (see Marin County Code under Section 6.2.4). Therefore, project compliance with the County Code would address fugitive dust emissions that could be generated by future projects constructed under the proposed Project.

Based on the preceding discussion and analysis, implementation of the proposed Project could have a **potentially significant impact** with regard to criteria air pollutant emissions (excluding fugitive dust emissions) that would be generated during construction, which requires mitigation. Accordingly, the County would implement Mitigation Measure 6-2 to address equipment exhaust emissions.

Mitigation Measure 6-2 requires future projects to continue complying with Countywide Program AIR-1.b. Future projects facilitated by the adoption of proposed Project would be required to assess the emissions that they could generate and compare those emissions to thresholds

maintained by the BAAQMD. The project-specific air quality analyses would identify mitigation, as applicable, to reduce project-specific impacts related to construction criteria air pollutant emissions that have the potential to exceed BAAQMD CEQA thresholds of significance. Due to uncertainty related to where development activities would occur within the Project Area, it is not possible at this time to identify project-specific impacts that could occur under implementation of the proposed Project; however, it is anticipated some of, if not all, development projects over the next 10 to 20 years would require the utilization of project-specific mitigation measures, such as requiring all heavy-duty off-road diesel-powered construction equipment to meet U.S. EPA Tier IV Final emissions standards (for equipment greater than 50-horsepower), to reduce construction emissions.

Although future development projects would be required to comply with Mitigation Measure 6-2, it is not known at this time whether all future development facilitated by the Project would be able to reduce potential criteria air pollutant emissions to levels that are below BAAQMD thresholds. Therefore, even with implementation of Mitigation Measure 6-2, criteria air pollutant construction emissions associated with the proposed Project could continue to exceed applicable BAAQMD thresholds and could generate a cumulatively considerable net increase in criteria air pollutants for which the region is in non-attainment. This impact would be **significant and unavoidable**.

**Mitigation Measure 6-2: Evaluate Air Quality Impacts of Proposed Projects and Plans.**

The County shall require future projects and plans to evaluate and mitigate, as necessary, potential air quality impacts through Countywide Plan Program AIR-1.b. The text of Countywide Plan Program AIR-1.b states:

Evaluate Air Quality Impacts of Proposed Projects and Plans. As part of the Environmental Review Process, use the current BAAQMD CEQA Guidelines to evaluate the significance of air quality impacts from projects or plans, and to establish appropriate minimum submittal and mitigation requirements necessary for project or plan approval.

Even with implementation of these measures, this impact would remain **significant and unavoidable**.

**Impact 6-3: Generate Toxic Air Contaminant Emissions that Expose Sensitive Receptors to Substantial Pollutant Concentrations During Construction.** [Threshold of Significance (c)] Adoption of the proposed Project would result in construction activities over the next 10 to 20 years that generate toxic air contaminant emissions and could expose sensitive receptors to substantial pollutant concentrations. This would be a **potentially significant impact**.

As discussed under Impact 6-2, the adoption of the proposed Project would not directly result in construction of any development or infrastructure; however, future development supported by the Project would result in short-term construction-related emissions. Some of these construction emissions would be TACs, which could have an adverse effect on receptors who

are exposed to them. Specifically, heavy-duty off-road construction equipment, as well as haul trucks for any soil import / export, would generate exhaust PM<sub>2.5</sub>, with a portion of the exhaust PM<sub>2.5</sub> consisting of DPM, which is a TAC.

Although site-specific details of future projects in the Project Area are not known at this time, it is reasonable to assume that construction TAC emissions associated with one or more projects developed under implementation of the proposed Project could have the potential to expose sensitive receptors to substantial TAC concentrations.<sup>8</sup> For example, residential development occurring within urbanized areas (e.g., Strawberry Village Center, Kentfield Catholic Church, etc.) would be located in proximity of existing residential receptors, and exposing these existing sensitive receptors to DPM emissions could have the potential to exceed the BAAQMD's cancer and non-cancer thresholds of significance of 10 in a million and 1.0 Hazard Index, respectively (see Table 6-5).

Based on the preceding discussion and analysis, implementation of the proposed Project could have a **potentially significant impact** with regard to construction TAC emissions that would be generated during construction, which requires mitigation. Accordingly, the County would implement Mitigation Measure 6-3 to address equipment exhaust emissions.

Mitigation Measure 6-3 would require future projects to assess potential air quality impacts and evaluate potential TAC construction emissions associated with the development project. Although future development projects would be required to implement Mitigation Measure 6-3, it is not known at this time if all development projects occurring under implementation of the proposed Project would be able to reduce potential TAC emissions to levels that are below BAAQMD thresholds. Therefore, even with the implementation of Mitigation Measure 6-3, TAC construction emissions associated with the proposed Project could result in significant adverse health risks at receptor locations. This impact would be **significant and unavoidable**.

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<sup>8</sup>Although this construction analysis primarily focuses on TAC emissions, criteria air pollutant emissions generated during construction activities (e.g., CO, O<sub>3</sub>, etc.) have the potential to cause adverse health effects; however, the construction emissions generated by future development authorized by adoption of the proposed Project would not expose sensitive receptors to substantial criteria air pollutant concentrations. While project-specific construction details are not yet known for the housing sites, future development projects would implement Mitigation Measures 6-2 and 6-3, which require the project's air quality emissions to be assessed for impacts. Over the last couple decades improvements have been made to off-road equipment emissions standards, and equipment has transitioned to newer and cleaner equipment, meaning that fewer pollutant concentrations, on average, are being emitted by construction projects as time progresses. Unlike TACs, which can cause severe health effects at very low concentrations, it takes a larger amount of criteria air pollutant emissions to result in significant adverse health effects. Further, most of Marin County benefits from clean air. Because human response to criteria air pollutant concentrations is cumulative (i.e., background plus project), future projects facilitated by approval of the proposed Project could have higher emissions than locations with high pollutant concentrations before adverse health risks would occur. Therefore, future development authorized by the proposed project would not result in criteria air pollutant emissions that would expose sensitive receptors to substantial pollutant concentrations.

**Mitigation Measure 6-3: Evaluate Air Quality Impacts of Proposed Projects and Plans.**  
Implement Mitigation Measure 6-2.

**Mitigation Measure 6-2: Evaluate Air Quality Impacts of Proposed Projects and Plans.** The County shall require future projects and plans to evaluate and mitigate, as necessary, potential air quality impacts through Countywide Plan Program AIR-1.b. The text of Countywide Plan Program AIR-1.b states:

Evaluate Air Quality Impacts of Proposed Projects and Plans. As part of the Environmental Review Process, use the current BAAQMD CEQA Guidelines to evaluate the significance of air quality impacts from projects or plans, and to establish appropriate minimum submittal and mitigation requirements necessary for project or plan approval.

Even with implementation of Mitigation Measure 6-3, this impact would remain ***significant and unavoidable***.

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**Impact 6-4: Expose Sensitive Receptors to Substantial Operational Pollutant Concentrations.** [Threshold of Significance (c)] Implementation of the proposed Housing Element Update would not expose sensitive receptors to substantial operational pollutant concentrations of toxic air contaminants nor criteria air pollutants. This impact would be **less than significant**.

**Operational Toxic Air Contaminant Emissions**

The residential land uses proposed by the Housing Element Update would not include operational sources of TAC emissions such that significant exposures could occur. This impact would be less than significant, because the Project does not propose land uses that support large stationary sources or that support the types of mobile sources that generate large amounts of TACs.<sup>9</sup> Proposed land uses may include emergency diesel back-up generators or natural gas-fueled boilers that would require permitting by BAAQMD. These types of sources of air pollution would operate in accordance with BAAQMD rules and regulations and not cause significant exposure for on- or off-site sensitive receptors pursuant to BAAQMD permitting requirements. Furthermore, as described in this impact discussion, below, under “Receptor

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<sup>9</sup>The vast majority of the mobile sources associated with operation of the residential dwelling units proposed by the Housing Element Update would be passenger vehicles and be powered by gasoline or electricity. The mobile sources would overwhelmingly not consist of diesel-powered trucks, which are correlated to the movement of materials associated with industrial and warehousing operations and produce DPM emissions, the most common source of TAC emissions and corresponding health effects associated with mobile source operation. Gasoline-powered mobile sources emit TACs (e.g., benzene, 1,3-butadiene, ethylbenzene, etc.) in much smaller quantities than diesel-powered vehicles and therefore require a receptor to be exposed to a higher concentration of gasoline-related TACs to result in the same health risks as a receptor being exposed to a lower level of DPM concentrations. In contrast to gasoline- and diesel-powered vehicles, electric vehicles do not generate exhaust emissions during their operation and, therefore, do not have exhaust-related TAC emissions.

Exposure to Criteria Air Pollutants,” there is uncertainty regarding where these specific sources of TACs and PM<sub>2.5</sub> emissions would be located and, therefore, where potential health risk increases could occur. Regardless of future source locations, the operational TACs emitted by projects facilitated under implementation of the Housing Element Update would not exacerbate existing health risks at or in proximity of the Project Area, because the Project does not propose large stationary sources (e.g., industrial sources) or land uses involving the types or quantities of mobile sources that would have the potential to expose receptors to concentrations of TACs that would result in significant health risks.

Rather, the residential land uses identified in the Housing Element Update typically generate most emissions from gasoline-powered mobile sources, which are transient in nature and emissions would disperse in accordance with where the vehicle is traveling (most of which would occur away from the residential dwelling unit that they own / lease). In other words, the gasoline vehicles associated with operation of the residential dwelling units would not involve idling in a location for a prolonged amount time, which could expose receptors in their proximity to prolonged periods of pollutant concentrations. The vehicles emissions would also be subject to the prevailing meteorological conditions at the time of their release (e.g., wind, rain, etc.), which would affect how the mobile source pollutants disperse. Mobile source emissions would have different daily dispersion characteristics due to changing weather conditions, even if the vehicle(s) travel along the same roadways and in the same patterns each day. Because of this, receptors would not be exposed to the same pollutant concentrations on a daily basis, even if vehicles travel in consistent patterns. Furthermore, as discussed previously, the vast majority of the mobile sources associated with the residential land uses proposed by the Project would be gasoline powered (attribute to passenger vehicles). Most of these mobile sources would not consist of diesel-powered trucks, which are used for the movement of materials associated with industrial and warehousing operations and produce DPM emissions and which is the most common source of TAC emissions and corresponding health effects associated with mobile source operation. The proposed Project does not propose land uses that would generate substantial, operational TAC emissions. This impact would be ***less than significant***.

### **Receptor Exposure to Criteria Air Pollutants**

In addition to criteria air pollutant emissions on a regional scale and TAC emissions on a local scale, receptor exposure to elevated concentrations of criteria air pollutants (e.g., CO, O<sub>3</sub>, and PM) is capable of causing adverse health effects on heart, lung, and other organ systems. As described under Impact 6-1, the residential development authorized by adoption of the Housing Element Update would generate cumulatively considerable operational criteria air pollutant emissions for which the region is designated nonattainment; however, these operational criteria air pollutant emissions would not expose receptors to substantial operational pollutant concentrations, and analysis linking potential adverse health risks to corresponding pollutant concentrations would be speculative at this time for several reasons.

First, to estimate potential adverse health effects from regional emissions, it is necessary to have information on the sources of the ozone and PM emissions, such as the location of emission points, velocity of emissions, the meteorology and topography of the area, and the location of receptors exposed to the emissions. While the general nature of the emissions sources occurring with implementation of the Housing Element Update is known (i.e., area source, energy source, mobile source), the specific location of these sources within the Project Area is not known, nor is other information, including source emission rate, exit velocity, operating characteristics (e.g., daytime or nighttime, seasonal or steady-state), etc.



Second, as discussed under “Operational Toxic Air Contaminant Emissions,” the majority of operational emissions (including NOx and PM) would be attributable to mobile sources (i.e., vehicle trips) that would potentially travel on numerous local and regional roadways throughout the Project Area and beyond (e.g., into Sonoma, Napa, or Contra Costa counties) that would be subject to varying meteorological and topographical influences. The gasoline-powered mobile source emissions would be subject to small scale air patterns, such as those formed as wind passes between and around anthropogenic features (e.g., building, cars, etc.) and natural structures (e.g., trees, hills, etc.) creating eddies and other turbulence that affect pollutant transport. The Project also does not propose land uses that would generate substantial criteria air pollutants from stationary sources that require permitting by the BAAQMD, such as those associated with industrial operations. Aside from mobile source emissions, which are anticipated to become cleaner over time due to actions taken at the federal, state, and local levels,<sup>10</sup> the next largest sources of criteria air pollutant emissions are anticipated to come from the use of consumer products and landscaping equipment. Neither of these sources would be used at the frequency nor magnitude required to result in criteria air pollutant emissions that would be harmful to one’s health.<sup>11</sup>

Third, the Project Area consists of parcels located throughout Marin County, where development is generally concentrated along the eastern side of the North Bay peninsula. Prevailing winds in the county would primarily transport pollutants to the east and southeast (i.e., toward the waters of San Pablo Bay and San Francisco Bay) where sensitive receptors generally do not reside. Meteorological influences over the approximately 5 miles between the North Bay (e.g., San Rafael, Novato, etc.) and East Bay (e.g., Richmond, San Pablo, Hercules, etc.) land masses would provide ample time for the incremental increase in emissions associated the land uses proposed by the Housing Element Update to disperse.

Finally, adverse health effects associated with receptor exposure to criteria air pollutant concentrations is cumulative in nature. In other words, any potential health effects associated with the Housing Element Update’s operational emissions would also need to be considered in light of background pollutant emissions. As discussed previously in this EIR chapter, there are many efforts being undertaken at the state, regional, and local levels to reduce criteria air pollutant emissions from stationary and mobile sources. These actions are anticipated to reduce pollutant concentrations throughout the region over the next few decades. Therefore, even if the proposed Project does increase emissions in the Bay Area, criteria air pollutant concentrations in the region could still be lower in the future than they are currently due to the advancement of cleaner technologies.

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<sup>10</sup>The County has placed, and continues to place, a heavy emphasis on expanding the use of electric vehicles throughout the county. This is evident through its requirements specified for electric vehicle charging in new development identified in the Marin County Green Building Code and through the implementation of the County’s Climate Action Plan (see Chapter 10). These actions taken by the County are anticipated to further reduce mobile source emissions in the county beyond that which would occur due to actions taken by the state and federal governments.

<sup>11</sup>CARB adopted the Small Offroad Engines Regulation in late 2021 that will require most newly manufactured small off-road engines, such as those found in leaf blowers, lawn mowers, and other equipment, be zero emission starting in 2024. Over time, the existing landscaping equipment powered by gasoline or diesel will be transitioned to zero emission technologies, reducing emissions from these sources, as well.

As described above, it would be speculative to translate the net increase in ROG, NO<sub>x</sub>, and PM emissions that could occur with implementation of the proposed Housing Element Update into site-specific quantifiable health risks for several specific reasons, including the uncertain location of emission points, velocity of emissions, the meteorology and topography of the area (which could affect the transport rate and photochemical reactions needed to produce ozone), background criteria air pollutant emissions in the future, and the location of receptors in relation to emission sources. However, given that the majority of the Housing Element Update's emissions would be attributable to mobile sources, most of which would be related to gasoline vehicles (and the County has placed a heavy emphasis on transitioning those vehicles to electricity), the Housing Element Update would not alter criteria air pollutant concentrations within the SFBAAB in such a manner that the net increase in criteria air pollutant concentrations would result in a significant health risk to receptors. .

Therefore, the operational emissions associated with future development facilitated by adoption of the Housing Element Update would neither exacerbate nor contribute significantly to health risks at or in proximity of the Project Area. This impact would be ***less than significant***.

### **Carbon Monoxide Emissions**

The BAAQMD developed a screening-level analysis for CO hotspots in 2010 which finds that projects that are consistent with the applicable congestion management program, and that do not cause traffic volumes at affected intersections to increase to more than 44,000 vehicles per hour, would not result in a CO hotspot that could exceed State or Federal air quality standards (BAAQMD 2017a, pg. 3-4). Based on the traffic roadway volumes prepared for the Project by Kittleson & Associates for the EIR's VMT analysis, the maximum number of vehicles moving through any study intersection in a given day in proximity of the Project Area would be well below 44,000 vehicles per hour. For context, the roadway with the greatest daily traffic volume under 2040 project conditions would be approximately 44,698 vehicles on I-580 from U.S. 101 to the County limit. It should be reiterated that this roadway volume reflects a daily rate, not hourly; therefore, other non-highway roadway segments would also have lower daily and hourly volumes. No intersection would operate anywhere near of the BAAQMD's threshold of 44,000 vehicles per hour. Therefore, the Project would not cause or significantly contribute to CO concentrations that exceed State or Federal ambient air quality standards for CO. This impact would be ***less than significant***.

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**Impact 6-5: Objectionable Odors.** [Threshold of Significance (d)] According to the BAAQMD's CEQA Air Quality Guidelines, land uses associated with odor complaints include agricultural operations, wastewater treatment plants, landfills, and certain industrial operations (such as manufacturing uses that produce chemicals, paper, etc.). Construction occurring within the Project Area could produce odors from fuel combustion and/or the use of solvents and paints. These odors would be temporary, quickly disperse, and would not affect a substantial number of people. The Project would support an increase the amount of residential development throughout the county. The Project does not propose any new, major land uses identified in the BAAQMD's CEQA Air Quality Guidelines as a source of potential odors (e.g., wastewater treatment plant). This impact would be ***less than significant***.

### **Cumulative Air Quality Impacts**

As described in Section 6.1.4, the SFBAAB is designated nonattainment for O<sub>3</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub>. The BAAQMD, in developing its CEQA significance thresholds, considered the emission levels at which a project's individual emissions would be cumulatively considerable. The BAAQMD considers projects that result in emissions that exceed its CEQA significance thresholds to result in individual impacts that are cumulatively considerable and significant.

The growth that could be facilitated by adoption of the proposed Housing Element Update would be inconsistent with the BAAQMD 2017 Clean Air Plan (see Impact 6-1) and, as discussed under Impact 6-2, could facilitate future development projects that generate construction emissions in excess of the BAAQMD's recommended regional CEQA thresholds, despite the implementation of Mitigation Measure 6-2. Although the quantity of emissions (i.e., in pounds or tons) attributable to a single project does not necessarily contribute to air pollution levels measured within the SFBAAB and in or near the county, the BAAQMD, in developing its CEQA significance thresholds, considered the emission levels at which a project's individual emissions would be cumulatively considerable. Because the proposed Project proposes growth that could result in emissions that exceed the BAAQMD CEQA significance thresholds, it would be inconsistent with the 2017 Clean Air Plan and could impede attainment of air quality standards. Despite the implementation of Mitigation Measures 6-1 and 6-2, this impact would be ***significant and unavoidable***.

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### **Other Planning Considerations (Exposure of New Receptors to Air Quality Risks and Hazards)**

2007 CWP Programs AIR-2.a through AIR-2.c would require that health risks to be evaluated for development proposals facilitated by the adoption of the Housing Element Update. Within the SFBAAB, localized risks are primarily associated with exposure to TACs and PM<sub>2.5</sub> emissions. As discussed in Section 6.3.1, TACs are a defined set of airborne pollutants that may pose a present or potential hazard to human health, and PM<sub>2.5</sub> is a type of particle pollution that pose an increased risk because they can penetrate the deepest parts of the lung, leading to and exacerbating heart and lung health effects. Common sources of TACs and PM<sub>2.5</sub> emissions are stationary sources (e.g., diesel backup generators, gasoline stations, and dry cleaners), which are subject to BAAQMD permit requirements. Another common and often more significant source type is on-road motor vehicles on high-volume roads and off-road sources such as construction equipment. Although the proposed Housing Element Update does not include plans for any new, large stationary sources of emissions, it could result in new sensitive residential receptors near existing sources of emissions.

Consistent with the BAAQMD's CEQA Air Quality Guidelines, the proposed Housing Element Update would not expose sensitive residential receptors to substantial community risks or hazards if it identifies special overlay zones around existing and planned sources of TACs and PM<sub>2.5</sub>, including special overlay zones of at least 500 feet on each side of all freeways and high-volume roadways, and the plan identifies goals, policies, and objectives to minimize potentially adverse impacts. For example, the CARB *Air Quality and Land Use Handbook* recommends avoiding the siting of new sensitive land uses (e.g., residences, schools, etc.) within:

- Within 300 feet of large gasoline fueling stations (with a throughput of more than 3.6 million gallons of gasoline per year);
- Within 300 feet of dry cleaning operations;
- Within 500 feet of freeways, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day; and
- Within 1,000 feet of a major rail service or maintenance yard.

2007 CWP Program AIR-2.a requires that sensitive receptors be set back from emissions sources, consistent with BAAQMD screening distances (see below) unless detailed project-specific studies can demonstrate sensitive receptor land use compatibility with adjacent uses. Program AIR-2.b sets forth similar requirements as Program AIR-2.a, but for risk specifically associated with roadways. Finally, Program AIR-2.c formally requires a health risk analysis to be prepared during environmental review for projects that propose to locate sensitive receptors near roadways and stationary sources and that if health risks are found to be significant, they are mitigated to levels that are consistent with BAAQMD standards. For example, sites near freeways (e.g., Strawberry Village Center) would be required to comply with these health risk assessment policies, as would housing sites in proximity to rail lines (e.g., Cal Park) and stationary sources. Table 6-9 below identifies stationary sources within 1,000 feet of proposed housing sites that could pose a potentially unacceptable risk to future receptors. These risk values are based on screening data available from the BAAQMD, which reflect 2020 emissions data submitted to CARB as part of the California Emissions Inventory Development and Reporting System (CEIDARS). The health risks shown in Table 6-9 reflect conditions as of 2020, and it is anticipated that new or modified sources of TACs will be permitted by the BAAQMD in the future. Thus, new development proposed under implementation of the proposed Housing Element Update would be required to use the latest tools available from the BAAQMD when preparing a site-specific health risk assessment (consistent with 2007 CWP Program AIR-2.c).

**Table 6-9:  
Potentially Unacceptable Health Risks From Stationary Sources**

<b>Facility Name</b>	<b>Type of Source</b>	<b>Potentially Unacceptable Cancer Risk Value<sup>(A)</sup></b>	<b>Potentially Unacceptable Non-Cancer Risk Value<sup>(B)</sup></b>	<b>Nearest Housing Site(s)</b>	<b>Distance From Source to Housing Site (Feet)</b>
Sausalito Marin City Sanitary District	Generator	19.1	(0.03)	190 A Donahue St	0
				200 Phillips Dr	715
				101 Donahue St	800
301 Tennessee Valley Rd	Funeral Services	28.0	2.51	Off Donahue St, Marin City	560
				205 Tennessee Valley Rd	800
				217 Shoreline Hwy	930
251 Shoreline Hwy	Gas Dispensing Facility	40.7	(0.20)	204 Flamingo Rd	510
				217 Shoreline Hwy	730

**Table 6-9:  
Potentially Unacceptable Health Risks From Stationary Sources**

Facility Name	Type of Source	Potentially Unacceptable Cancer Risk Value <sup>(A)</sup>	Potentially Unacceptable Non-Cancer Risk Value <sup>(B)</sup>	Nearest Housing Site(s)	Distance From Source to Housing Site (Feet)
				205 Tennessee Valley Rd	900
570 Redwood Hwy Frontage Rd	Gas Dispensing Facility	22.4	(0.11)	664 Redwood Hwy Frontage Rd	920
580 Redwood Hwy Frontage Rd	Gas Dispensing Facility	49.7	(0.24)	664 Redwood Hwy Frontage Rd	715
789 Redwood Hwy Frontage Rd # 524	Gas Dispensing Facility	216.2	1.04	800 Redwood Highway Frontage Rd	285
				664 Redwood Hwy Frontage Rd	680
Tiburon Chevron	Gas Dispensing Facility	28.8	(0.14)	Eagle Rock Rd, Strawberry	240
				70 N Knoll Rd	878
				23 Reed Blvd	920
Verizon Wireless (Bolinas)	Vacant	18.8	(0.03)	534 Overlook Dr	900
AT&T	Generator	41.4	(0.02)	54 B St	93
				60 Fifth Street	625
				9 Giacomini Rd	645
				2 Toby St	650
				Mesa Rd, Pt Reyes Station	728
				Mesa Rd, Pt Reyes Station	814
				100 Commodore Webster Dr	875
				10905 State Route 1	980
				10979 State Route 1	997
				520 Mesa Rd	900
Redwood Oil Company dba Point Reyes Station	Gas Dispensing Facility	15.5	(0.07)	520 Mesa Rd	95
				60 Fifth Street	115
				510 Mesa Rd	250
				Mesa Rd, Pt Reyes Station	290

**Table 6-9:  
Potentially Unacceptable Health Risks From Stationary Sources**

Facility Name	Type of Source	Potentially Unacceptable Cancer Risk Value <sup>(A)</sup>	Potentially Unacceptable Non-Cancer Risk Value <sup>(B)</sup>	Nearest Housing Site(s)	Distance From Source to Housing Site (Feet)
				Mesa Rd, Pt Reyes Station	370
				11445 State Route 1	415
				2 Toby St	445
				9 Giacomini Rd	735
				54 B St	745
County of Marin, Nicasio Yard	Generator	29.7	(0.05)	5600 Nicasio Valley Rd	0
County of Marin Woodacre Fire	Gas Dispensing Facility	11.6	(0.06)	33 Castle Rock	0
Woodlands Gas & Mart	Gas Dispensing Facility	70.3	(0.34)	139 Kent Ave	890
Marin Health Medical Center	Health Care Services	74.6	(0.13)	25 Bayview Rd	290
North Gate Gas	Gas Dispensing Facility	11.2	(0.05)	77 San Pablo Ave	0
				70 San Pablo Ave	118
United Pacific #5662	Gas Dispensing Facility	30.2	a (0.15)	155 Marinwood Ave	145

Source: BAAQMD 2022c

- A. A potentially unacceptable risk could occur if the cancer risk exceeds the BAAQMD threshold of 10 in a million (BAAQMD 2017a).
- B. A potentially unacceptable risk could occur if the chronic and acute hazard index exceeds the BAAQMD threshold of 1.0 (BAAQMD 2017a). Values in parentheses reflect risks that are below the BAAQMD non-cancer risk threshold of 1.0.

As shown in Table 6-9, there are several existing sources in proximity to new Housing Sites that may require a site-specific health risk assessment if and when development is proposed at those sites. Compliance with the 2007 CWP's policies and programs would ensure that risks to new sensitive receptors would not be unacceptable.

#### 6.4 References

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## 7. BIOLOGICAL RESOURCES

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Biological Resources. <i>Would the project:</i></b>				
a) <i>Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?</i>		X		
b) <i>Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?</i>		X		
c) <i>Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?</i>		X		
d) <i>Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites?</i>		X		
e) <i>Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?</i>				X
f) <i>Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan?</i>				X

This EIR chapter describes the environmental setting, including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, discusses Project goals, policies, and implementation programs that would avoid or reduce those potential impacts, and identifies mitigation measures as needed to reduce significant impacts.

<sup>1</sup>State CEQA Guidelines, Appendix G, item IV (a through f).

## 7.1 ENVIRONMENTAL SETTING

### 7.1.1 Methodology

The proposed Project's potential impacts on biological resources were assessed by first reviewing data related to biological resources from the 2007 Marin Countywide Plan Update DEIR (2007 CWP Update DEIR) and the 2012 Draft Marin County Housing Element Draft Supplement to the 2007 Countywide Plan EIR (2012 Housing Element DSEIR). This information was compared to existing biological conditions in the Planning Area by conducting a desktop analysis, i.e., reviewing relevant databases, and updating information regarding sensitive biological resources (e.g., species listing status) in the Planning Area. The following additional information sources were reviewed:

- California Department of Fish and Wildlife California Natural Diversity Database (CNDDDB) record search for Marin County (CNDDDB 2022)
- California Native Plant Society (CNPS) Rare Plant Program Inventory of Rare and Endangered Plants of California record search for Marin County (CNPS 2022)
- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) tool (USFWS 2022)
- National Marine Fisheries Service (NMFS) Essential Fish Habitat Mapper was reviewed to determine the locations of designated, mapped Essential Fish Habitat and Habitat Areas of Particular Concern (NMFS 2022a)
- NMFS ESA Critical Habitat Mapper was reviewed to determine the locations of designated critical habitat for federally threatened and endangered species under the jurisdiction of the NMFS (NMFS 2022b)
- USFWS Critical Habitat Mapper was reviewed to determine the locations of designated critical habitat for federally threatened and endangered species under the jurisdiction of the USFWS in the Planning Area (USFWS 2022)
- United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2020)
- ebird (Cornell Lab of Ornithology 2022)
- iNaturalist (2022)
- USFWS National Wetland Inventory (NWI 2020)
- Marin County Breeding Bird Atlas (Shuford 1993)
- 2007 CWP Update DEIR (Nichols Berman 2007)
- 2012 Housing Element DSEIR (Nichols Berman 2012)
- Marin Geohub Map Data
- Marin County's 106-class Fine Scale Vegetation Map and 26-class Forest Lifeform Map (GGNRA and Tukman Geospatial LLC 2021a)
- Biological Analysis – Site Selection Criteria and Approach, Marin County Housing Element (MIG 2022), a preliminary constraints analysis of 10 candidate housing sites

- Other relevant scientific literature, technical databases, resource agency reports, and Federal Register notices and other information published by USFWS and NMFS to assess the current distribution of special-status plants and animals in the project vicinity

### 7.1.2 Results

The following section describes the results of the desktop analysis of the existing conditions for the Planning Area. This section includes a description of existing natural communities and landcover types, special-status species and sensitive habitats, critical habitat for federally-listed species, and wildlife movement that are known to occur or may occur in the Planning Area.

A. Natural Communities and Land Cover Types. A variety of current vegetation mapping sources were reviewed for this EIR, including Marin County's 106-class Fine Scale Vegetation Map and 26-class Forest Lifeform Map, (GGNRA and Tukman Geospatial LLC 2021a). While natural communities and landcover in the Planning Area were not field-verified, a comparison of the broad-scale 26-class Forest Life Form Map with the broad-scale vegetation mapping in the 2007 CWP Update DEIR vegetation map confirmed that natural communities and landcover continue to be accurately represented. While there may have been some changes of those features in the last 15 years, the 2007 CWP Update DEIR map still reflects the overall natural communities and landcovers that are present in the Planning Area.<sup>2</sup> Focused field surveys and review of the vegetation communities mapped at the fine scale will be necessary to accurately map vegetation communities and landcover types for future individual Housing and Safety Element projects.

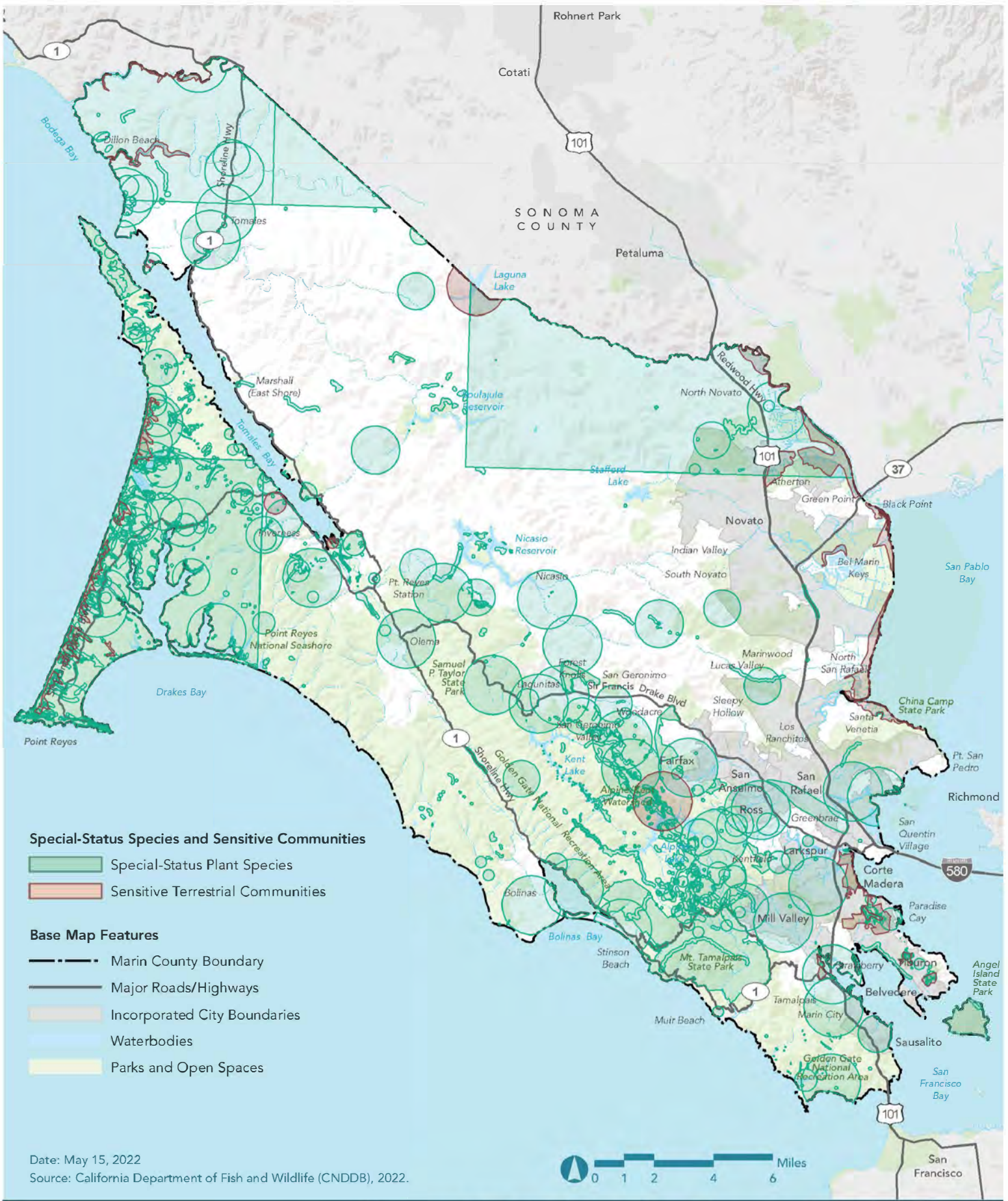
Consistent with the 2007 CWP Update EIR, there are 15 natural communities and land cover types present within the Planning Area (See Exhibit 4.6-1 of the 2007 CWP Update DEIR). These vegetation communities and land cover types include barren/rock, chaparral, coastal salt marsh, coastal scrub, Douglas fir/redwood forest, dune, freshwater marsh, grassland/agriculture, non-native eucalyptus/pine/scrub, oak woodland, oak/bay woodland, pine/cypress forest, redwood forest, riparian scrub/woodland, and urban developed.

### B. Special-Status Species and Sensitive Habitats.

*1. Special-Status Plant Species.* A list of 140 special-status plant species known to occur or thought to have potential to occur in Planning Area was compiled using the CNPS Rare Plant Inventory (CNPS 2022) and CNDDDB records (CNDDDB 2022) (Figure 7-1). Of these, 20 species are listed as threatened or endangered under the Federal and/or California Endangered Species Act. These species include:

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<sup>2</sup>The vegetation communities of the fine scale vegetation map were determined to be more detailed than was necessary for this programmatic-level EIR.



**Figure 7.1 - CNDDb-Mapped Records of Special-Status Plants and Sensitive Communities**

- a. Baker's larkspur
- b. beach layia
- c. Contra Costa goldfields
- d. golden larkspur
- e. Marin western flax,
- f. marsh sandwort,
- g. North Coast semaphore grass,
- h. Point Reyes meadowfoam,
- i. Point Reyes paintbrush,
- j. Santa Cruz tarplant,
- k. soft salty bird's-beak,
- l. Sonoma alopecurus,
- m. Sonoma spineflower,
- n. Tiburon jewelflower,
- o. Tiburon mariposa-lily,
- p. Tiburon paintbrush,
- q. Tidestrom's lupine,
- r. two-fork clover,
- s. robust spineflower,
- t. white-rayed pentachaeta

Scientific names are listed in Table 7-1.1 of the Biological Resources appendix (Appendix D) of this EIR.

The remaining 120 species are CNPS List 1 or List 2 species, CNPS List 3 and 4 species, or listed as rare under the California Native Plant Protection Act. The majority of these species' occurrences are located in the western portion of the Planning Area in the Point Reyes National Seashore, Marin Municipal Water District/Mount Tamalpais Watershed, Mount Tamalpais State Park State Park, Muir Woods National Monument, and Marin Headlands. Special-status plant occurrences are also present in the eastern portion of the Planning Area, but some of these occurrences overlap with development, are several decades old, and are possibly extirpated. Other occurrences are still in existence and occur in remaining open space areas or remnant patches of habitat surrounded by development.

2. *Special-Status Animals.* Based on a review of the CNDDDB (2022) and USFWS IPaC (USFWS 2022), and other special-status animal lists, 109 special-status animals are known to occur or are thought to have potential to occur within or in proximity to the Planning Area (Figure 7.2). Of these, 26 species are listed as threatened or endangered under the Federal and/or California Endangered Species Act, or are candidates for listing under the Federal or California Endangered Species Act. These species include:

- a. steelhead - Central California Coast Distinct Population Segment (DPS) (population 8),
- b. Coho salmon Central California Coast Evolutionary Significant Unit (ESU)
- c. Chinook Salmon Sacramento River winter-run (population 7)
- d. southern green sturgeon DPS
- e. tidewater goby
- f. delta smelt
- g. longfin smelt
- h. eulachon
- i. California freshwater shrimp
- j. monarch butterfly (overwintering population 1)
- k. Mission blue butterfly
- l. Myrtle's blue butterfly
- m. California red-legged frog
- n. foothill yellow-legged frog
- o. California tiger salamander Sonoma County DPS
- p. green sea turtle
- q. northern spotted owl
- r. Swainson's hawk
- s. western yellow-billed cuckoo
- t. California least tern
- u. bald eagle
- v. tricolored blackbird
- w. western snowy plover
- x. California black rail
- y. California Ridgway's rail
- z. marbled murrelet
- aa. salt marsh harvest mouse

Scientific names are listed in Table 7-1.2 in the Biological Resources appendix (Appendix D) of this EIR. The remaining 83 species are considered California species of special concern or Fully Protected by CDFW, Marine Life Management Act State regulated fishery, Marine Mammal Commission Marine Mammal Species of Special Concern, or are listed on CDFW's Special Animals List.

The majority of these occurrences are concentrated in the western portion of the Planning Area including the Point Reyes National Seashore, Marin Municipal Water District/Mount Tamalpais



Watershed, Mount Tamalpais State Park State Park, Muir Woods National Monument, and Marin Headlands. Fewer occurrences are located in more developed areas in the eastern portion of the Planning Area.

C. Sensitive Natural Communities and Vegetation Alliances. Eight natural communities classified by CDFW as sensitive natural communities are reported to occur within the Planning Area (Figure 7-1) (CNDDDB 2022). These communities are central dune scrub (Rank G2/S2.2), coastal and valley freshwater marsh (Rank G3/S2.1), coastal brackish marsh (Rank G2/S2.1), northern coastal salt marsh (Rank G3/S3.2), northern maritime chaparral (Rank G1/S1.2), northern vernal pool (Rank G2/S2.1), serpentine bunchgrass (Rank G2/S2.2), and coastal terrace prairie (Rank G2/S2.1). Additionally, the Planning Area supports a variety of aquatic features including wetlands and streams, which are also considered sensitive. Aquatic features in the Planning Area were not field-verified, but a comparison of the Marin County Wetlands and Streams map in the 2007 CWP Update DEIR (Exhibit 4.6-5) with various current sources (USGS 2019, NWI 2022) confirmed that the broad-scale aquatic features presented in the 2007 CWP Update DEIR remain accurate.

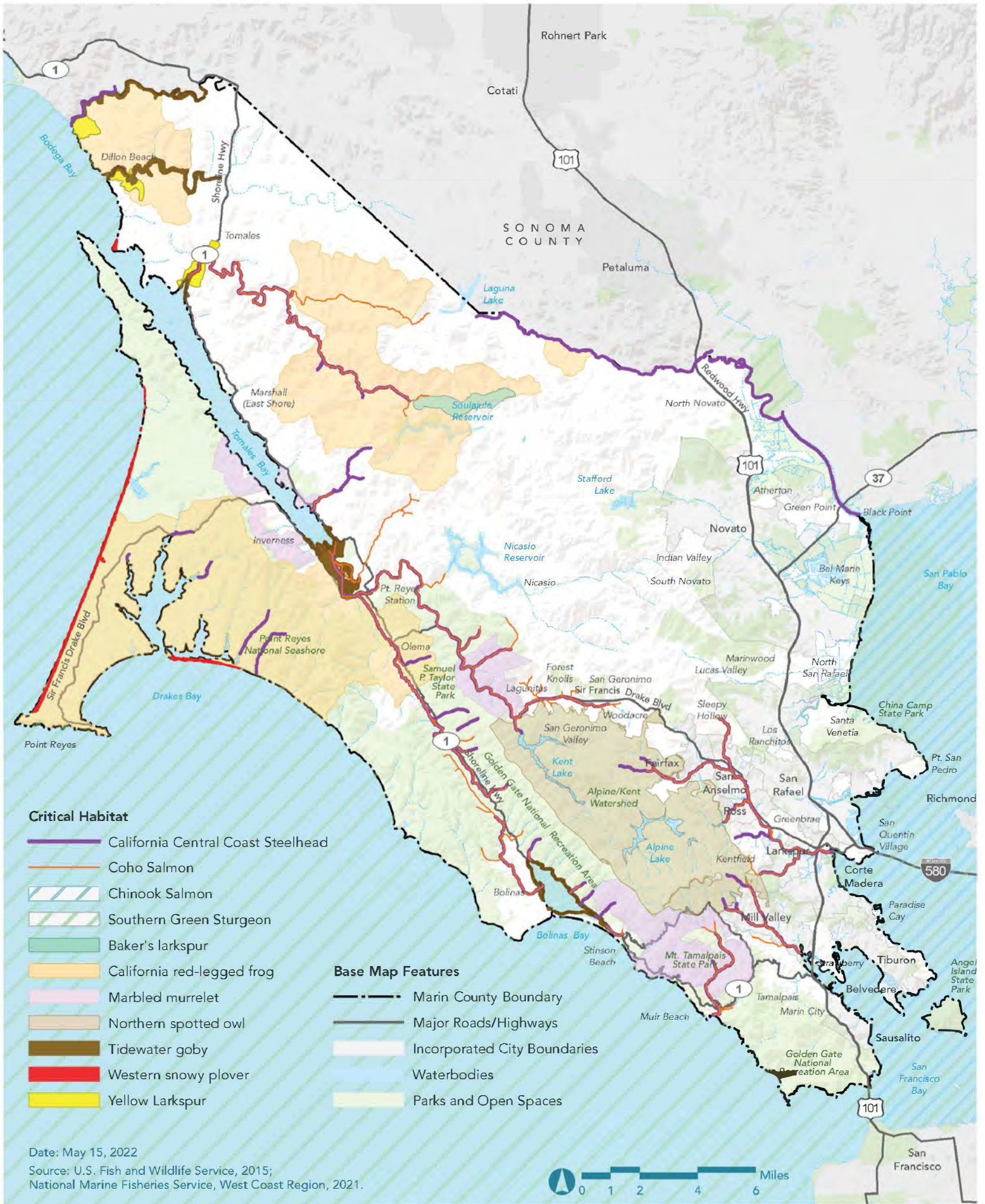
Sensitive vegetation alliance and association data were not queried for this analysis because such a query would require a detailed assessment that is beyond the scope of this program-level analysis. Sensitive vegetation alliances and associations may be present in the Planning Area, and a detailed analysis for these communities would be required on a project-by-project basis.

D. Critical Habitat. Critical habitat is a term defined in the Endangered Species Act (ESA) as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The Planning Area supports designated Critical Habitat for 11 species: California red-legged frog, marbled murrelet, western snowy plover, northern spotted owl, coho salmon, Central California Coast steelhead DPS, chinook salmon (California coastal ESU and Sacramento River winter-run ESU), southern green sturgeon, tidewater goby, Baker's delphinium, and golden larkspur (Figure 7-3). Critical habitat areas are located primarily within the coastal and inland rural corridors in the Planning Area. Critical habitat for the southern green sturgeon was finalized in 2009 but was not included in the 2012 Update. Critical Habitat for the northern spotted owl was revised in 2021.

(e) Wildlife Movement. Wildlife movement in the Planning Area takes many forms and is different for the variety of species occurring in the area. Bird and bat species move readily over the landscape in the project vicinity, foraging over and within both natural lands and landscaped areas. Mammals of different species move within their home ranges but also disperse between patches of habitat. Generally, reptiles and amphibians make movements between breeding areas, upland refugia, or hibernacula. Some species, especially some species of birds and bats, are migratory, moving into or through the Planning Area during specific seasons. Aside from bats, there are no other mammal species in the region that are truly migratory. However, the young of many mammal species disperse from their natal home ranges, sometimes moving over relatively long distances in search of new areas in which to establish their own territories. Additionally, some species of fish born in freshwater streams or protected estuaries migrate to the open ocean or Bay waters where they spend most of their lives until they return as adults to their natal habitats to spawn.



**Figure 7.2 - CNDDDB-Mapped Records of Special-Status Animals**



**Figure 7.3 - Critical Habitat**

Movement corridors are segments of habitat that provide linkages for wildlife through a variety of habitat types across the landscape. On a broader level, corridors also function as paths along which wide-ranging animals can travel, populations can move in response to environmental changes and natural disasters, and genetic interchange can occur. In the Planning Area, movement corridors often consist of riparian areas along streams, rivers, or other natural features in developed and undeveloped areas, or through undeveloped areas of natural habitat.

As described in the 2007 CWP, Marin County contains a diverse assemblage of both natural and human-influenced environments: from the shoreline, coastal terraces, and ridgelines of the coast, the expansive open space and watershed lands surrounding Mount Tamalpais, to the more intensively developed City-Centered Corridor interspersed with riparian corridors, wooded hillsides, and the Baylands along San Francisco and San Pablo bays. The unprotected natural areas that remain, primarily in the City-Centered and Inland Rural Corridors, are subject to continued development pressures, contributing to declining water quality, habitat conversion, and fragmentation.

Protecting and enhancing habitat connectivity and functional movement corridors between the remaining natural areas is essential to sustaining populations and allowing for the continued dispersal of native plant and animal species. Natural linkages include the undeveloped baylands and shorelines, riparian corridors and drainages, undeveloped ridgelines, and corridors across valley floors where impermeable barriers such as dense urban development, exclusionary fencing, and heavily traveled roadways have not yet eliminated options for wildlife movement and plant dispersal. While narrow corridors may be the only option in some locations due to the extent of existing development, habitat linkages are most effective through maintenance of a permeable landscape (i.e., one that allows for uninhibited movement of species across large areas).

## 7.2 REGULATORY SETTING

Biological resources in California are protected under federal, State, and local laws. The laws that may pertain to the biological resources affected by the Project are described in this section.

### 7.2.1 Federal Regulations and Laws

**Clean Water Act.** The Clean Water Act (CWA) is the primary federal law regulating water quality. The implementation of the CWA is the responsibility of the U.S. Environmental Protection Agency (EPA). However, the EPA depends on other agencies, such as the individual states and the U.S. Army Corps of Engineers (USACE), to assist in implementing the CWA. The objective of the CWA is to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” Section 404 and 401 of the CWA apply to activities that would impact waters of the U.S. The USACE enforces Section 404 of the CWA, and the California State Water Resources Control Board enforces Section 401.

#### **Section 404**

As part of its mandate under Section 404 of the CWA, the EPA regulates the discharge of dredged or fill material into “waters of the United States” (U.S.). “Waters of the U.S.” include territorial seas, tidal waters, and non-tidal waters in addition to wetlands and drainages that support wetland vegetation, exhibit ponding or scouring, show obvious signs of channeling, or have discernible banks and high-water marks. Wetlands are defined as those areas “that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to

support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3(b)). The discharge of dredged or fill material into waters of the U.S. is prohibited under the CWA except when it is in compliance with Section 404 of the CWA. Enforcement authority for Section 404 was given to the USACE, which it accomplishes under its regulatory branch. The EPA has veto authority over the USACE’s administration of the Section 404 program and may override a USACE decision with respect to permitting.

Substantial impacts to waters of the U.S. may require an Individual Permit. Projects that only minimally affect waters of the U.S. may meet the conditions of one of the existing Nationwide Permits, provided that such permits’ other respective conditions are satisfied. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions (see below).

### **Section 401**

Any applicant for a federal permit to impact waters of the U.S. under Section 404 of the CWA, including Nationwide Permits where pre-construction notification is required, must also provide to the USACE a certification or waiver from the State of California. The “401 Certification” is provided by the State Water Resources Control Board through the local Regional Water Quality Control Board (RWQCB).

The RWQCB issues and enforces permits for discharge of treated water, landfills, stormwater runoff, filling of any surface waters or wetlands, dredging, agricultural activities, and wastewater recycling. The RWQCB recommends the “401 Certification” application be made at the same time that any applications are provided to other agencies, such as the USACE, USFWS, or NOAA Fisheries. The application is not final until completion of environmental review under CEQA. The application to the RWQCB is similar to the pre-construction notification that is required by the USACE. It must include a description of the habitat that is being impacted, a description of how the impact is proposed to be minimized, and proposed mitigation measures with goals, schedules, and performance standards. Mitigation must include a replacement of functions and values, and replacement of wetland at a minimum ratio of 2:1, or twice as many acres of wetlands provided as are removed. The RWQCB looks for mitigation that is on site and in-kind, with functions and values as good as or better than the water-based habitat that is being removed.

**Rivers and Harbors Act.** Section 10 of the Rivers and Harbors Act of 1899 prohibits the creation of any obstruction to the navigable capacity of waters of the U.S., including discharge of fill and the building of any wharfs, piers, jetties, and other structures without Congressional approval or authorization by the Chief of Engineers and Secretary of the Army (33 U.S. Code 403). Navigable waters of the U.S., which are defined in 33 CFR, Part 329.4, include all waters subject to the ebb and flow of the tide, and/or those which are presently or have historically been used to transport commerce. The shoreward jurisdictional limit of tidal waters is further defined in 33 CFR, Part 329.12 as “the line on the shore reached by the plane of the average mean high water (MHW).” Where precise definition of the actual location of the MHW line becomes necessary, it must be established by survey with reference to the available tidal datum. The USACE does not regulate wetlands under Section 10, only the open waters component of tidal habitat (under the Rivers and Harbors Appropriation Act of 1899), and there is overlap between Section 10 jurisdiction, which extends landward to the MHW and Section 404 jurisdiction, which extends landward to the high tide line.

As mentioned above, Section 404 of the CWA authorizes the USACE to issue permits to regulate the discharge of dredged or fill material into waters of the U.S. If a project also proposes to discharge dredged or fill material and/or introduce other potential obstructions in navigable waters of the U.S., a Letter of Permission authorizing these impacts must be obtained from the USACE under Section 10 of the Rivers and Harbors Act.

**Federal Endangered Species Act.** The federal Endangered Species Act (FESA) is administered by the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries). Under the federal ESA, the USFWS has primary responsibility for terrestrial and freshwater organisms and NOAA Fisheries has primary responsibility of marine wildlife and anadromous fish. FESA provides protection for species included on the federal list of endangered and threatened species (known as "listed species"). In particular, FESA prohibits "take" of threatened or endangered species, as well as destruction or adverse modification of designated critical habitat of these species. "Take" is defined by the FESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect [a federally listed species] or to attempt to engage in any such conduct" (16 U.S. Code [U.S.C.] 1532(19), 1538). Federal regulations also define "take" to include the incidental destruction of animals in the course of an otherwise lawful activity, such as habitat loss due to development. Therefore, the definition of "take" includes significant habitat modification or degradation that kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 Code of Federal Regulations [CFR] 17.3). For plants, FESA governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any federally listed plant on non-federal land in knowing violation of state law (16 U.S. C. 1538(a)(2)(B)).

**Migratory Bird Treaty Act.** The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions between the U.S. and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the MBTA provides that it is unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture, or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg, or product, manufactured or not. In short, under the MBTA it is illegal to remove vegetation containing nests that are being actively used, since this could result in killing a bird or destroying an egg.

**Bald and Golden Eagle Protection Act.** Under the Bald and Golden Eagle Protection Act (BGEPA) it is unlawful to import, export, take, sell, purchase, or barter any bald eagle or golden eagle, or their parts, products, nests, or eggs. "Take" includes pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing. Exceptions may be granted by the USFWS for scientific or exhibition use and for cultural use by Native Americans. In addition, in 2009 the USFWS established new permit regulations under the BGEPA that allows for incidental take of eagles while conducting otherwise lawful activities (50 CFR 22.26). No permits may be issued for import, export, or commercial activities involving eagles.

**Magnuson-Stevens Fishery Conservation and Management Act.** The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the United States' 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans (FMPs) to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from the NMFS, establish Essential Fish Habitat (EFH) in FMPs for all managed species. All tidal waters within the Planning Area are designated EFH (Pacific Fisheries

Management Council 1998, 2012). Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with the NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to recommendations by the NMFS. All intertidal habitats in the County up to the elevation of mean higher high water (MHHW; 6.84 ft NAVD88) are considered to be EFH for a number of species that are federally managed under one or more of the following three FMPs:

- Coastal Pelagic FMP – northern anchovy (*Engraulis mordax*), Pacific sardine (*Sardinops sagax*), mackerel, squid
- Pacific Groundfish FMP – various rockfish, soles, and sharks
- Pacific Salmon FMP – Chinook salmon (*Oncorhynchus tshawytscha*)

**Marine Mammal Protection Act.** The Marine Mammal Protection Act prohibits the take of marine mammals, with certain exceptions, in waters under the jurisdiction of the U.S. or by citizens of the U.S. on the high seas, as well as the importation of marine mammals and marine mammal products into the U.S. Take is defined as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal.” Harassment is defined as “any act of pursuit, torment, or annoyance which has the potential to injure a marine mammal or marine mammal stock in the wild; or has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.”

## 7.2.2 State Regulations and Laws

**Clean Water Act/Porter-Cologne Water Quality Control Act.** The State Water Resources Control Board works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region, and may approve, with or without conditions, or deny projects that could affect waters of the State. Their authority comes from the CWA and the State’s Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne broadly defines waters of the State as “any surface water or groundwater, including saline waters, within the boundaries of the state.” Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California’s jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. such as headwaters, wetlands, and riparian areas. However, where riparian habitat is absent, the RWQCB’s jurisdiction would extend to the top of bank.

Pursuant to the CWA, projects that are regulated by the USACE must also obtain a Section 401 Water Quality Certification permit from the RWQCB. This certification ensures that the proposed project will uphold state water quality standards. Because California’s jurisdiction to regulate its water resources is much broader than that of the federal government, proposed impacts on waters of the State require Water Quality Certification even if the area occurs outside of USACE jurisdiction. Moreover, the RWQCB may impose mitigation requirements even if the USACE does not. Under the Porter-Cologne, the SWRCB and the nine regional boards also have the responsibility of granting CWA National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements for certain point-source and non-point discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. In these new guidelines, riparian

habitats are not specifically described as waters of the State but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures for Discharges of Dredged or Fill Material to Waters of the State describe riparian habitat buffers as important resources that may be included in required mitigation packages for permits for impacts to waters of the State, as well as areas requiring permit authorization from the RWQCBs for impacts. The RWQCBs may impose mitigation requirements even if the USACE does not, and it should be noted that the State of California's jurisdiction to regulate its water resources is much broader than that of the federal government.

**California Fish and Game Code Sections 1602 and 1603.** Under California Fish and Game Code Section 1603, the CDFW regulates any project proposed by any person that will “substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds.” California Fish and Game Code Section 1602 requires an entity to notify the CDFW of any proposed activity that may modify a river, stream, or lake. If the CDFW determines that proposed activities may substantially adversely affect fish and wildlife resources, a Lake and Streambed Alteration Agreement (LSAA) must be prepared. The LSAA provides conditions necessary to protect fish and wildlife and must comply with CEQA.

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A stream is defined in Title 14, California Code of Regulations Section 1.72, as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation.” Consistent with this definition, the CDFW extends its jurisdiction to encompass riparian habitats that function as part of a watercourse. California Fish and Game Code Section 2786 defines riparian habitat as “lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source.”

**California Coastal Act.** The California Coastal Act (1976) has stipulations related to coastal zone management and wetlands protection, including coastal development permits. All development in the coastal zone and activities that impact resources in the coastal zone require a permit. The California Coastal Act prohibits dredge and fill activities in coastal wetlands, with the exception of low impact allowable uses such as restoration or research. Additionally, no “coastal-dependent development” is permitted in wetlands. The California Coastal Act defines wetlands as “lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens” (Section 30121). Such areas are typically further designated Environmentally Sensitive Habitat Areas, within or near which development activities are substantially limited.

The California Coastal Commission (CCC) is charged with the enforcement of the California Coastal Act. The CCC provides a more specific definition for coastal wetlands in its regulations, which state that a wetland is “land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentration of salts or other substances in the substrate. Such wetlands



can be recognized by the presence of surface water or saturated substrate at some point during each year and their location within or adjacent to vegetated wetland or deepwater habitats.” The CCC, therefore, uses its own wetlands definition when delineating coastal wetlands that requires evidence of a single parameter (vegetation, soils, or hydrology) to establish wetland conditions, rather than all three wetland parameters (as required for a wetland under federal jurisdiction).

The California Coastal Act also authorizes local governments to administer coastal development permits within their jurisdictions if they have established a Local Coastal Program (LCP) approved and certified by the Coastal Commission. Specific provisions of the California Coastal Act, as implemented within the LCP, relate to wetlands. Since 2008, the County was working on amending portions of the LCP related to land use and permitting framework. In August 2021, Marin County adopted a Resolution that placed the entire updated portion of the County’s LCP Amendments into effect. The County is currently working with stakeholders to update the Environmental Hazards portion of the LCP.

**McAteer-Petris Act.** The McAteer-Petris Act, enacted on September 17, 1965, serves as a legal provision under California state law to preserve San Francisco Bay from indiscriminate filling. The act initially established the San Francisco Bay Conservation and Development Commission (BCDC) as a temporary state agency charged with preparing a plan for the long-term use of the San Francisco Bay. In August 1969, the McAteer-Petris Act was amended to make BCDC a permanent regulatory agency to incorporate the policies of the Bay Plan (BCDC 2012). BCDC jurisdiction includes a 100-foot-wide band along the shoreline of the San Francisco Bay. The shoreline is defined as all areas that are subject to tidal action from the south end of the San Francisco Bay to the Golden Gate (Point Bonita–Point Lobos), and to the Sacramento River line (a line between Stake Point and Simmons Point, extended northeasterly to the mouth of Marshall Cut). The BCDC will claim all sloughs (specifically, marshlands lying between mean high tide and up to 5 feet above mean sea level where marsh vegetation is present); tidelands (lands between mean high tide and mean low tide); and submerged lands (land lying below mean low tide) in this region. The McAteer-Petris Act also requires that “maximum feasible public access, consistent with a project be included as part of each project to be approved by the BCDC.”

**California Endangered Species Act.** The California Endangered Species Act (CESA; Fish and Game Code 2050 et seq.) generally parallels FESA. It establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. Section 2080 of the California Fish and Game Code prohibits the take, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or by the regulations. “Take” is defined in Section 86 of the California Fish and Game Code as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” This definition differs from the definition of “take” under FESA. CESA is administered by CDFW. CESA allows for take incidental to otherwise lawful projects but mandates that State lead agencies consult with the CDFW to ensure that a project would not jeopardize the continued existence of threatened or endangered species.

**Native Plant Protection Act.** The Native Plant Protection Act (NPPA) was created with the intent to preserve, protect, and enhance rare and endangered plants in California (California Fish and Game Code Sections 1900 to 1913). The NPPA is administered by the CDFW, which has the authority to designate native plants as endangered or rare and to protect them from

“take.” The CDFW maintains a list of plant taxa that have been officially classified as endangered, threatened, or rare.

### 7.2.3 Local Regulations

**Marin Countywide Plan.** The 2007 CWP and other local policies and ordinances contain goals to protect fish, wildlife, and their habitats, including rare and endangered species, and to conserve and restore riparian vegetation and habitat. At the program level the Housing and Safety Element Update will comply with applicable goals, policies, and implementing programs of the 2007 CWP that protect biological resources. All future projects that are facilitated by the Housing and Safety Element Update will be evaluated for compliance with relevant policies and implementing programs that protect biological resources. The following adopted 2007 CWP policies address biological resources protection and reflect the State CEQA Guidelines protection of biological resources.

**Policy BIO-1.1 Protect Wetlands, Habitat for Special-Status Species, Sensitive Natural Communities, and Important Wildlife Nursery Areas and Movement Corridors.** Protect sensitive biological resources, wetlands, migratory species of the Pacific flyway, and wildlife movement corridors through careful environmental review of proposed development applications, including consideration of cumulative impacts, participation in comprehensive habitat management programs with other local and resource agencies, and continued acquisition and management of open space lands that provide for permanent protection of important natural habitats.

**Policy BIO-1.3 Protect Woodlands, Forests, and Tree Resources.** Protect large native trees, trees with historical importance; oak woodlands; healthy and safe eucalyptus groves that support colonies of monarch butterflies, colonial nesting birds, or known raptor sites; and forest habitats. Prevent the untimely removal of trees through implementation of standards in the Development Code and the Native Tree Preservation and Protection Ordinance. Encourage other local agencies to adopt tree preservation ordinances to protect native trees and woodlands, regardless of whether they are located in urban or undeveloped areas.

**Policy BIO-1.5 Promote Use of Native Plant Species.** Encourage use of a variety of native or compatible nonnative, non-invasive plant species indigenous to the site vicinity as part of project landscaping to improve wildlife habitat values.

**Program BIO-1.b Develop Habitat Monitoring Programs.** Using Countywide GIS mapping of natural communities and other information sources, work with other agencies to develop a program to monitor trends in habitat loss, protection, and restoration. Establish cumulative thresholds for habitat loss for particularly vulnerable natural communities and use as a basis for modifying standards for mitigation.

**Program BIO-1.f Prepare Appropriate Landscape Lists.** Prepare lists of appropriate native and nonnative landscape species that are not invasive plants, have habitat value, have low-water requirements, and, for high hazard areas of the County, have low flammability. Prepare a second set of lists of plant species to avoid that are highly flammable, inappropriate water-thirsty plants, or undesirable invasive exotic species for property owner use in developing new or enhancing existing landscaping. Require applicants for discretionary approval with parcels that share all or part of a boundary with publicly owned open space to develop landscape plans that fully conform to the lists of appropriate plants. Prepare lists with input from the California Department of Fish and Game, agricultural commissioner, University of California Cooperative

Extension, California Native Plant Society, Marin Municipal Water District, National Park Service, and other appropriate sources to verify suitability.

**Policy BIO-2.1 Include Resource Preservation in Environmental Review.** Require environmental review pursuant to CEQA of development applications to assess the impact of proposed development on native species and habitat diversity, particularly special-status species, sensitive natural communities, wetlands, and important wildlife nursery areas and movement corridors. Require adequate mitigation measures for ensuring the protection of any sensitive resources and achieving “no net loss” of sensitive habitat acreage, values, and function.

**Policy BIO-2.2 Limit Development Impacts.** Restrict or modify proposed development in areas that contain essential habitat for special-status species, sensitive natural communities, wetlands, baylands, and coastal habitat, and riparian habitats, as necessary to ensure the continued health and survival of these species and sensitive areas. Development projects should preferably be modified to avoid impacts on sensitive resources, or to adequately mitigate impacts by providing on-site or (as a lowest priority) off-site replacement at a higher ratio.

**Policy BIO-2.3 Preserve Ecotones.** Condition or modify development permits to ensure that ecotones, or natural transitions between habitat types, are preserved and enhanced because of their importance to wildlife. Ecotones of particular concern include those along the margins of riparian corridors, baylands and marshlands, vernal pools, and woodlands and forests where they transition to grasslands and other habitat types.

**Policy BIO-2.4 Protect Wildlife Nursery Areas and Movement Corridors.** Ensure that important corridors for wildlife movement and dispersal are protected as a condition of discretionary permits, including consideration of cumulative impacts. Features of particular importance to wildlife for movement may include riparian corridors, shorelines of the coast and bay, and ridgelines. Linkages and corridors shall be provided that connect sensitive habitat areas such as woodlands, forests, wetlands, and essential habitat for special-status species, including an assessment of cumulative impacts

**Policy BIO-2.5 Restrict Disturbance in Sensitive Habitat During Nesting Season.** Limit construction and other sources of potential disturbance in sensitive riparian corridors, wetlands, and baylands to protect bird nesting activities. Disturbance should generally be set back from sensitive habitat during the nesting season from March 1 through August 1 to protect bird nesting, rearing, and fledging activities. Preconstruction surveys should be conducted by a qualified professional where development is proposed in sensitive habitat areas during the nesting season, and appropriate restrictions should be defined to protect nests in active use and ensure that any young have fledged before construction proceeds.

**Policy BIO 2.7 Protect Sensitive Coastal Habitat.** Protect coastal dunes, streams, and wetlands, and sensitive wildlife habitat from development in accordance with coastal resource management standards in the development code

**Policy BIO-2.8 Coordinate with Trustee Agencies.** Consult with trustee agencies (the California Department of Fish and Game, U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration Fisheries, U.S. Army Corps of Engineers, Environmental Protection Agency, Regional Water Quality Control Board, and Bay Conservation and Development Commission) during environmental review when special-status species, sensitive natural communities, or wetlands may be adversely affected.

**Policy BIO-2.9 Promote Early Consultation with Other Agencies.** Require applicants to consult with all agencies with review authority for projects in areas supporting wetlands and special status species at the outset of project planning.

**Program BIO-2.a Require Site Assessments.** Require site assessment by a qualified professional for development applications that may adversely affect sensitive biological or wetland resources, including jurisdictional wetlands, occurrences of special-status species, occurrences of sensitive natural communities, and important wildlife nursery areas and movement corridors. The assessment should determine the presence or absence of any sensitive resources that could be affected by development, evaluate the potential impacts, and identify measures for protecting the resource and surrounding habitat. Require the assessment to be conducted by a qualified professional paid for by the applicant. Unless waived, the qualified professional should be hired directly by Marin County.

**BIO-2.b Conduct Habitat Connectivity Assessment.** Conduct a comprehensive assessment of habitat fragmentation and connectivity loss in coordination with resource agencies, landowners, and interested public. Develop recommendations for policies to protect essential habitat corridors and linkages, and to restore and improve opportunities for native plant and animal dispersal. Protection could include acquisition as open space in fee title, permanent preservation and management under a conservation easement, or other suitable methods. Important factors that should be considered as part of the assessment include the following: locations of sensitive resources such as special-status species and wetlands; methods to eliminate obstructions along streams that currently limit the functions and values of riparian corridors; effects of intensive development, major roadways, and fencing on plant and animal dispersal; and the need to protect and enhance linkages between baylands and undeveloped uplands through the eastern part of the County.

**Policy BIO-2.e Participate in FishNet4C Program.** Continue to actively participate in the FishNet4C program and work cooperatively with participating agencies to implement recommendations to improve and restore aquatic habitat for listed anadromous fish species and other fishery resources.

**Policy BIO-3.1 Protect Wetlands.** Require development to avoid wetland areas so that the existing wetlands and upland buffers are preserved and opportunities for enhancement are retained (areas within setbacks may contain significant resource values similar to those within wetlands and also provide a transitional protection zone). Establish a Wetland Conservation Area (WCA) for jurisdictional wetlands to be retained, which includes the protected wetland and associated buffer area. Development shall be set back a minimum distance to protect the wetland and provide an upland buffer. Larger setback standards may apply to wetlands supporting special status species or associated with riparian systems and baylands under tidal influence, given the importance of protecting the larger ecosystems for these habitat types as called for under Stream Conservation and Baylands Conservation policies defined in Policy BIO-4.1 and BIO-5.1, respectively. Regardless of parcel size, a site assessment is required either where incursion into a WCA is proposed or where full compliance with all WCA criteria would not be met.<sup>3</sup>

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<sup>3</sup>(Wetland protection criteria for evaluating development projects is contained in pages 2.4-16 to 2.4-18 of the Natural Systems & Agricultural Element of the Countywide Plan).

**Policy BIO-3.2 Require Thorough Mitigation.** Where avoidance of wetlands is not possible, require provision of replacement habitat on-site through restoration and/or habitat creation at a minimum ratio of 2 acres for each acre lost (2:1 replacement ratio) for on-site mitigation and a minimum 3:1 replacement ratio for off-site mitigation. Mitigation wetlands should be of the same type as those lost and provide habitat for the species that use the existing wetland. Mitigation should also be required for incursion within the minimum WCA setback/transition zone.

**Program BIO-3.b Comply with Regulations to Protect Wetlands.** Continue to require development applications to include the submittal of a wetland delineation for sites with jurisdictional wetlands and to demonstrate compliance with these wetlands policies, standards, and criteria, and with State and federal regulations.

**Program BIO-3.c Require Site Assessment.** Require development applications to include the submittal of a site assessment prepared by a qualified professional where incursions into the WCA are proposed, or adverse impacts to wetlands resources may otherwise occur. The assessment should be considered in determining whether any adverse direct or indirect impacts on wetlands would occur as a result of the proposed development, whether wetlands criteria and standards are being met, and to identify measures necessary to mitigate any significant impacts. The site assessment may also serve as a basis for the County to apply restrictions in addition to those required by State and federal regulations. The site assessment shall be paid for by the applicant. Unless waived, the qualified professional shall be hired directly by Marin County.

**Program BIO-3.d Prioritize Wetland Avoidance.** Amend the Development Code to require development to avoid wetlands and transition zones. Where avoidance of wetlands is not possible, require the provision of replacement habitat on-site through restoration and/or habitat creation, provided that no net loss of wetland area, wetland function, and habitat values occurs. On-site wetlands mitigation shall be provided at a minimum ratio of 2 acres for each acre lost (2:1 replacement ratio). Allow off-site wetland mitigation only when an applicant has demonstrated that no net loss of wetland area, wetland functions, and wetland values would occur, and that onsite mitigation is not possible. In those rare instances when on-site wetlands loss is unavoidable and on-site replacement is infeasible, require that a minimum of 3 acres be provided through mitigation for each acre lost (3:1 replacement ratio), preferably of the same habitat type as the wetland area that would be lost. The mitigation site should be close to the site of loss so that the mitigation wetland would provide habitat for the species that use the existing wetlands.

**Program BIO-3.e Establish Clear Mitigation Criteria.** Amend the Development Code to incorporate wetland impact mitigations measures that accomplish the following objectives:

- A. No net losses shall occur in wetland acreage, functions, or values. This should include both direct impacts on wetlands and essential buffers, and consideration of potential indirect effects of development due to changes in available surface water and nonpoint water quality degradation. Detailed review of the adequacy of a proposed mitigation plan shall be performed as part of environmental review of the proposed development project to allow for a thorough evaluation of the anticipated loss, as well as the replacement acreage, functions, and values.
- B. Mitigation shall be implemented prior to and/or concurrently with the project activity causing the potential adverse impact to minimize any short-term loss and modification to wetlands.

C. An area of adjacent upland habitat shall be protected to provide an adequate buffer for wetland functions and values. Development shall be set back the minimum distance specified in Policy BIO-3.1 to create this buffer, unless an exception is allowed and appropriate mitigation is provided where necessary, pursuant to Policy BIO-3.2.

D. Mitigation sites shall be permanently protected and managed for open space and wildlife habitat purposes.

E. Restoration of wetlands is preferred to creation of new replacement wetlands, due to the greater likelihood of success.

F. Mitigation projects must, to the extent feasible, minimize the need for ongoing maintenance and operational manipulation (dredging, artificial water-level controls, etc.) to ensure long-term success. Self-sustaining projects with minimal maintenance requirements are encouraged.

G. All plans to mitigate or minimize adverse impacts to wetland environments shall include provisions to monitor the success of the restoration project. The measures taken to avoid adverse impacts may be modified if the original plans prove unsuccessful. Performance bonds shall be required for all mitigation plans involving habitat creation or enhancement, including the cost of five years of post-completion monitoring.

H. Mitigation must be commensurate with adverse impacts of the wetland alteration and consist of providing similar values and greater wetland acreage than those of the wetland area adversely affected. All restored or created wetlands shall be provided at the minimum replacement ratio specified in Program BIO-3.d and shall have the same or increased habitat values as the wetland proposed to be destroyed.

**Policy BIO-4.1 Restrict Land Use in Stream Conservation Areas.** A Stream Conservation Area (SCA) is established to protect the active channel, water quality and flood control functions, and associated fish and wildlife habitat values along streams. Development shall be set back to protect the stream and provide an upland buffer, which is important to protect significant resources that may be present and provides a transitional protection zone. Best management practices shall be adhered to in all designated SCAs. Best management practices are also strongly encouraged in ephemeral streams not defined as SCAs.<sup>4</sup>

**Policy BIO-4.2 Comply with SCA Regulations.** Implement established setback criteria for protection of SCAs through established discretionary permit review processes and/or through adoption of new ordinances. Environmental review shall be required where incursion into an SCA is proposed, and a discretionary permit is required.

In determining whether allowable uses are compatible with SCA regulations, development applications shall not be permitted if the project does any of the following:

- Adversely alters hydraulic capacity
- Causes a net loss in habitat acreage, value, or function

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<sup>4</sup>Information on exemptions to full compliance, determining if a project is within an SCA, and criteria to evaluate if a project will impact an SCA are provided in 2.4-22 to 2.4-24 of the *Natural Systems & Agricultural Element of the Countywide Plan*).

- Degrades water quality

**Policy BIO-4.4 Promote Natural Stream Channel Function.** Retain and, where possible, restore the hydraulic capacity and natural functions of stream channels in SCAs. Discourage alteration of the bed or banks of the stream, including filling, grading, excavating, and installation of storm drains and culverts. When feasible, replace impervious surfaces with pervious surfaces. Protect and enhance fish habitat, including through retention of large woody debris, except in cases where removal is essential to protect against property damage or prevent safety hazards. In no case shall alterations that create barriers to fish migration be allowed on streams mapped as historically supporting salmonids. Alteration of natural channels within SCAs for flood control should be designed and constructed in a manner that retains and protects the riparian vegetation, allows for sufficient capacity and natural channel migration, and allows for reestablishment of woody trees and shrubs without compromising the flood flow capacity where avoidance of existing riparian vegetation is not possible.

**Policy-4.19 Maintain Channel Stability.** Applicants for development projects may be required to prepare a hydraulic and/or geomorphic assessment of on-site and downstream drainageways that are affected by project area runoff. This assessment should be required where evidence that significant current or impending channel instability is present, such as documented channel bed incision, lateral erosion of banks (e.g., sloughing or landsliding), tree collapse due to streambank undermining and/or soil loss, or severe in-channel sedimentation, as determined by the County.

Characteristics pertinent to channel stability would include hillslope erosion, bank erosion, excessive bed scour or sediment deposition, bed slope adjustments, lateral channel migration or bifurcation, channel capacity, and the condition of riparian vegetation. The hydraulic and/or geomorphic assessment shall include on-site channel or drainageway segments over which the applicant has control or access. In the event that project development would result in or further exacerbate existing channel instabilities, the applicant could either propose his/her own channel stabilization program subject to County approval or defer to the mitigations generated during the required environmental review for the project, which could include maintenance of peak flows at pre- and post-project levels, or less. Proposed stabilization measures shall anticipate project-related changes to the drainageway flow regime.

All project improvements should be designed to minimize flood hydrograph peak flow or flood volume increases into drainage courses. To this end, design features such as porous pavement, pavers, maximizing overall permeability, drainage infiltration, disconnected impervious surfaces, swales, bioretention, green roofs, etc., should be integrated into projects as appropriate.

- For projects subject to discretionary review, the applicant may be required, as appropriate, to submit a pre-and post-project hydrology and hydraulic report detailing the amount of new impervious surface area and accompanying surface runoff from all improvement areas, including driveways — with a goal of zero increase in runoff (no net increase in peak off-site runoff). The applicant may be required to participate in a peak stormwater runoff management program developed pursuant to new Program BIO-4.20.

**Policy BIO-4.20 Minimize Runoff.** In order to decrease stormwater runoff, the feasibility of developing a peak stormwater management program shall be evaluated to provide mitigation opportunities such as removal of impervious surface or increased stormwater detention in the watershed.

**Program BIO-4.e Identify Proposals Within SCAs.** Determine whether a proposed development falls wholly or partially within an SCA, through agency review by County staff, and as necessary by a qualified professional, of discretionary application materials and site inspection.

**Program BIO-4.f Identify Potential Impacts to Riparian Systems.** At the time of a development application, evaluate potential impacts on riparian vegetation and aquatic habitat, and incorporate measures to protect riparian systems into the project design and construction. Retain and minimize disturbance to woody and herbaceous riparian vegetation in SCAs and adjacent areas. (Tree growth may be cleared from the stream channel where removal is essential to protect against property damage or prevent safety hazards.)

**Program BIO-4.g Require Site Assessment.** Require development applications to include the submittal of a site assessment prepared by a qualified professional where incursions into the SCA are proposed, or adverse impacts to riparian resources may otherwise occur. Unless waived, the qualified professional shall be hired by Marin County. The site assessment shall be paid for by the applicant and considered in determining whether any adverse direct or indirect impacts on riparian resources would occur as a result of the proposed development, whether SCA criteria and standards are being met, and to identify measures necessary to mitigate any significant impacts. The site assessment may also serve as a basis for the County to apply restrictions in addition to those required by State and federal regulations.

**Program BIO-4.h Comply with SCA Criteria and Standards.** All development permit applications shall be reviewed for conformity with these SCA policies, criteria, and standards and in accordance with the California Environmental Quality Act. Proposals that do not conform to SCA policies, and cannot be modified or mitigated to conform, shall be denied. If a proposal involves the creation of a new parcel that is wholly or partially in an SCA, the land division shall be designed to ensure that no development occurs within the SCA.

**Program BIO-4.i Replace Vegetation in SCAs.** When removal of native riparian vegetation is unavoidable in an SCA, and mitigation is required, require establishment of native trees, shrubs, and ground covers within a period of five years at a rate sufficient to replicate, after a period of five years, the appropriate density and structure of vegetation removed. Require replacement and enhancement planting to be monitored and maintained until successful establishment provides for a minimum replacement or enhancement ratio of 2:1.

**Policy BIO-5.1 Protect the Baylands Corridor.** Ensure that baylands and large, adjacent essential uplands are protected, and encourage enhancement efforts for baylands, including those in the Baylands Corridor. The following criteria shall be used to evaluate proposed development projects that may impact the Baylands Corridor:

For large parcels (over 2 acres in size), adhere to development setback standards for areas qualifying for protection under the WCA and SCA, but increase setback distances as necessary to ensure that hydrologically isolated features such as seasonal wetlands and freshwater marshes are adequately linked to permanently protected habitat. These additional development setbacks shall serve to prevent fragmentation and preserve essential upland buffers in the Baylands Corridor.

For small parcels (2 acres or less in size), encourage property owners where suitable habitat exists to preserve up to 10 feet landward of mean high tide as a species refuge area for high



water events. Site constraints, opportunities for avoidance of sensitive biological resources, and options for alternative mitigation, may also be considered.

Minor redevelopment involving less than 25% of a structure on a residential or industrial parcel that is already filled and at least 50% developed may be exempted from the requirements for a site assessment, provided that no additional filling or modification to wetlands occurs. (See BIO-5.2.)

**Policy BIO-5.2 *Limit Development and Access.*** Ensure that development does not encroach into sensitive vegetation and wildlife habitats, damage fisheries or aquatic habitats, limit normal wildlife range, or create barriers that cut off access to food, water, or shelter for wildlife. Require an environmental assessment where development is proposed within the Baylands Corridor.

**Policy BIO-5.3 *Leave Tidelands in Their Natural State.*** Require that all tidelands be left in their natural state to respect their biological importance to the estuarine ecosystem. Any modifications should be limited to habitat restoration or enhancement plans approved by regulatory agencies.

### **Marin County Native Tree Preservation and Protection (Ordinance No. 3342)**

The Native Tree Preservation and Protection Ordinance (Chapter 22.27, Ordinance No. 3342) of the Marin County Code establishes regulations for the preservation and protection of native trees in the nonagricultural unincorporated areas of the County by limiting tree removal in a manner that allows for reasonable use and enjoyment of private property. The ordinance applies only to “protected trees” on improved and unimproved parcels, generally prohibiting the removal of native trees between 6 and 10 inches in diameter (depending on species) without a permit, unless the tree is a nuisance or hazard. The County may require that tree removal be mitigated by replanting, or that an in-lieu fee be paid where tree planting on the site is not feasible or appropriate.

#### *Stream Conservation Area Ordinance for San Geronimo Valley (Ordinance No. 3770)*

The San Geronimo Valley Stream Conservation Area (SCA) Ordinance creates a new minimum 35-foot buffer along all streams, limits residential additions to a footprint of 300 square feet, and clarifies exemptions that allow removal of some vegetation. The ordinance creates standards for development within the buffer and provides for consistent permit review procedures and requirements. Standard Management Practices (SMPs) apply to all development located within the SCA in San Geronimo Valley for the protection of hydrologic processes, stream and riparian habitat, and water quality. Appropriate site specific SMPs would be identified through the required site assessment to offset or avoid adverse impacts to the stream and riparian resources, unless mitigation measures identified through environmental review would result in equal or greater environmental benefit. Consistent with Ordinance No. 3771, all rezoned lots within San Geronimo Valley would be subject to Ordinance No. 3770.

## **7.3 IMPACTS AND MITIGATION MEASURES**

This section describes potential impacts on biological resources that could result from the Project and discusses goals and policies pertaining to management and protection of biological resources in the County that are mostly found in the Natural Resources Element of the 2007 CWP. While the County’s goals, policies, and actions promote designing development projects to avoid or minimize impacts on biological resources to the extent feasible, they do not

necessarily ensure that substantial adverse effects would not occur within areas designated for development. The impact analysis that follows considers implementation of proposed policies and actions in Housing and Safety Elements Update, and where additional detail is needed, such details are provided as mitigation measures.

### 7.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to biological resources if it would:

- A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- C. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

### 7.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

The proposed Project would be implemented according to the regulatory requirements presented in Section 7.2 (Regulatory Setting), above. The Regulatory Setting requirements would be implemented, as applicable, within the framework of previously adopted County policies and programs, including specific regulatory agency habitat and species requirements. These previously adopted/established requirements are considered uniformly applicable to development policies and regulations related to the Housing and Safety Element Update. The following five proposed or revised policies and implementing programs from the June 1, 2022 Public Draft Safety Element include some component that would benefit natural resources in some way. The policies and programs are presented with ~~strikeout~~ text indicating existing CWP text that would be deleted and underline text indicating new text being proposed.

#### Draft Safety Element Policy

- EHS-34.2 Retain Natural Conditions.** Ensure that flow capacity is maintained in stream channels and flood plains, and achieve flood ~~control~~ management using flood

plain restoration and biotechnical techniques instead of storm drains, culverts, riprap, and other forms of structural stabilization.

### **Implementing Programs**

**EHS-4.i 5.5.b ~~Use Varied Implement Ecologically Sound Methods of Vegetation Management to Provide Fuel Breaks and Fire Suppression.~~** Collaborate with the Marin Wildfire Protection Authority Ecologically Sound Practices Partnership, which focuses on developing best management practices for fuel reduction projects in wildlands, provides subject matter expertise for project development, and environmental regulatory compliance. Use the best fuel reduction methods (depending on the time of year, fuel types, reduction prescriptions), presence of sensitive biological resources, and cost to implement the Marin County Community Wildfire Protection Plan and Marin Wildfire Protection Authority projects. This may include using California Department of Forestry inmate crews, the Tamalpais Fuel Crew, the Marin Conservation Corps, animal grazing, or fuel reduction contractors.

**EHS-6.3.d** **Advocate with State and Federal Agencies.** Advocate with state and federal resource agencies for new policies making living shoreline projects more easily permitted by recognizing the long-term habitat and biodiversity benefits.

**EHS-6.1.h** **Use Environmentally Sensitive Adaptation Strategies.** Where feasible the County shall encourage the use of existing natural features and ecosystem processes, or the restoration thereof, in adaptation projects and measures. This includes systems and practices that use or mimic natural processes, such as permeable pavements, bioswales, and other engineered systems, such as levees that are combined with restored natural systems, to provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife. Proposals addressing adaptation must analyze the feasibility of natural features and ecosystem process before proposing alternative measures.

**EHS-6.3.i** **Limit Seawall Barriers.** Limit repair, replacement, or construction of coastal sea walls and erosion barriers in order to avoid offsite impacts consistent with Local Coastal Program requirements and San Francisco Bay Conservation and Development Commission standards, and as demonstrated to be necessary to protect persons and properties from rising sea level.

### **7.3.3 Impacts and Mitigation Measures**

The following analysis is provided at a programmatic level consistent with the level of detail of the proposed Project. This section describes the potential impacts to biological resources from implementation of the Housing and Safety Element Update and recommends mitigation measures as needed to reduce significant impacts.

**Impact 7-1: Impacts to Special-Status Species.** [Threshold of Significance (a)]  
Development facilitated by the Project could occur on undeveloped or partially developed sites in proximity to areas where there are known occurrences of special-status species and/or habitats that may support these species. This could have a substantial adverse effect, either directly or through habitat modifications, on candidate, sensitive, or special-status species and is therefore considered a ***potentially significant impact***.

### **Housing Element Update Impacts**

A wide variety of special-status fish, wildlife, and plant species occur throughout the County (see Figure 7-1 and Figure 7-2), as does habitat that supports these species. The primary new policy of the Housing Element Update that could impact special-status species if it is implemented is the following:

- **Policy 1.2 Regional Housing Needs Assessment.** Maintain an adequate inventory of residential and mixed-use sites to fully accommodate the County's RHNA by income category throughout the planning period.

To comply with the RHNA requirement, the County identified approximately 150 candidate housing sites with more development capacity than needed to meet the RHNA, from which a smaller number of sites will be chosen to meet the RHNA, including a buffer for flexibility in site selection. While the Housing Element Update would not directly construct new residential units, it would promote and facilitate such development. Candidate housing sites are located on undeveloped or partially developed parcels that are in proximity to larger undeveloped areas such as Bowman Canyon, Buck Center, San Domenico School, 6760 Sir Francis Drake Boulevard, and Vacant Point Reyes Station. These parcels are in proximity to known occurrences of special-status species and/or habitats that may support these species and have a moderate to high potential to support special-status species.

Other sites are developed or otherwise disturbed such as Marinwood Plaza or the Kentfield Commercial sites. These sites lack suitable habitat to support special-status species, even if they overlap with past recorded species occurrences. However, without a site-specific assessment of each site, it is assumed that there is some potential that residential development of some of the candidate housing sites could potentially impact special-status species or their habitats. Potential impacts on special-status species that could occur include, but are not limited to, direct impacts such as removal of suitable habitat and direct injury or mortality of individuals; and indirect impacts such as habitat fragmentation, and habitat modification resulting from excess noise, lighting, or increased stormwater runoff.

Many of the project components of the Housing Element Update are consistent with the previously adopted policies and programs analyzed in the 2007 CWP Update EIR and 2012 Housing Element Update EIR. Relevant previously adopted policies and programs that would protect and avoid impacts on special-status species and their habitats include Policy BIO-1.1, Policy BIO-1.3, Policy BIO-2.1, Policy BIO-2.2, Policy BIO-2.8, Policy BIO-2.9, Program BIO-2.a, and Policy BIO-5.2 (see Regulatory Setting section above). Policies BIO-1.1, BIO-2.1, BIO-2.2, BIO-2.8, and Program BIO-2.a are specifically related to development and the protection of special-status species. These measures require environmental review pursuant to CEQA of proposed development applications, coordination with trustee agencies during environmental

review, site assessments for projects that may impact special-status species, evaluation of potential impacts, identification of mitigation measures to protect species, and ensure that development does not encroach on wildlife habitat. Policies BIO-1.3 and BIO-2.9 are not explicitly related to development but also provide for the protection of habitat for certain colonial roosting and nesting species and raptors; and require project applicants to consult with agencies with review authority at the beginning of project planning. The County and developers will comply with all the previously adopted policies and programs when implementing the Housing Element Update policies and programs. Therefore, no mitigation is required and potential impacts on special-status species will be ***less than significant***.

### **Safety Element Update Impacts**

Where there is potential for special-status species to occur, many of the new Safety Element Update Implementing Programs have potential to impact those species. Goals that may impact special-status species and their habitats include those related to disaster preparedness, safety from flooding, and safety from wildfire. These goals propose vegetation removal, widening of roads and trails for access, construction of flood protection armoring structures such as flood barriers or flood walls, and construction of or improvements and modifications to levees. The Draft Safety Element Update proposes the following revisions to already adopted CWP Safety Element Implementing Programs and proposes new implementing programs that could impact special-status species if they are implemented.

#### Revised

- **EHS-4.1e** Restrict Development in Flood Prone Areas to Minimize Inundation.
- **EHS-5.3d** Restrict Land Divisions.
- **EHS-5.5a** Require Adequate Clearance Vegetation Removal.
- **EHS-5.5c** Develop and Maintain Fuel Breaks and Vegetation on Access Routes.

#### New

- **EHS-2.3.f** Encourage Road Improvements.
- **EHS-2.4.d** Create New Evacuation Routes.
- **EHS-2.4.e** Ensure Access to New Development. Require new development to include adequate roadway ingress/egress for emergency access and evacuation routes.
- **EHS-4.5.a** Provide Flood Reduction Information Resources. (proposed).
- **EHS-4.6.a** Protect and Ensure Continued Operation of Critical Public Facilities.

Implementing programs EHS-2.3.f, EHS-2.4.d, and EHS-2.4.e may require removal of vegetation that could support special-status species anywhere their potential habitat occurs. Implementing Programs EHS 4.1.e, EHS-4.5.a, and EHS4.6.a may facilitate construction of or improvements to flood protection infrastructure such as flood walls, flood barriers, and levees. These programs may require removal of habitat that is potentially occupied by special-status species in or near coastal areas, aquatic habitats, and riparian areas. Policy EHS-5.5 (was 5.2), and Implementing Programs EHS-5.3.d (was 4.b), EHS-5.5.a (was 4.h), and EHS 5.5.c (was

4.g) promote removal of hazardous vegetation, fuel breaks, and vegetation management along emergency access routes. Facilitation of these programs would require removal of vegetation that may be utilized by special-status species wherever they occur. Additionally, should vegetation removal occur in proximity to aquatic habitats occupied by special-status fish and amphibians, these species could be indirectly impacted by erosion and sedimentation in the aquatic habitats where those species occur.

Many of the previously adopted policies and programs are focused on ensuring protection of biological resources relevant to new development. However, there are few previously adopted CWP policies or programs that address protection of special-status species relevant to the Safety Element Update Implementation Programs. The County would comply with Policy BIO-2.8 and Policy BIO-2.9 when implementing Safety Element Update policies and programs, which would ensure coordination and consultation with the relevant resource protection agencies.

Several of the proposed Safety Element Update policies would minimize potential impacts associated with the overarching Safety Element goals. EHS-4.2 and EHS-4.3.b promote natural means to stabilize stream banks and natural flood mitigation measures such as only using hardened structures as a last resort. EHS 5.5.b promotes ecologically sound practices for fuel reduction and suppression. EHS-6.1.g promotes the use of existing natural features and ecosystem processes when feasible to conserve ecosystem functions that benefit people and wildlife. EHS-4.2 would promote retaining natural conditions in streams as much as possible. EHS-4.3.c would promote the development of watershed management and monitoring plans to evaluate natural flood mitigation measures with an emphasis on species protection in addition to protection of human life and property. EHS-6.3.d would promote limiting seawall construction and repairs to only what is necessary to protect people and property. Together, these proposed policies promote protection of natural habitats that may support special-status species.

While the proposed policies/programs would generally support protection of biological resources, these policies/program would not be sufficient to ensure that adverse effects on biological resource related to projects facilitated by the Safety Element Update would be reduced to a less-than-significant level. Many of the Safety Element implementation programs would be undertaken by the County or other public or resource management agencies. These projects would be planned, designed, constructed, and maintained according to the relevant agency's procedures and protocols. Some projects may be relatively small such as drainage repair or maintenance, or vegetation management projects, and may be eligible for an exemption under CEQA if sensitive biological resources are not impacted. Other Safety Element projects would be large and would require significant planning, design, construction, and operational measures to avoid impacts to biological resources.

Private property owners and developers may also undertake projects consistent with Safety Element policies such as constructing wider and less steep access roads to meet current Fire Code requirements, providing two points of ingress/egress, construction of water tanks in VHFHSZ, etc. These projects would require permit applications be submitted to the County for review and processing. The County would determine if the activity is a project under CEQA and the appropriate level of CEQA review that is necessary.

Projects facilitated by the Safety Element Update could have ***potentially significant impacts*** on special-status species, and therefore the following mitigation measure is necessary. This measure would apply to all discretionary projects with the potential to impact biological resources.

**Mitigation Measure 7-1:** To Protect Special-Status Species During Implementation of Safety Element Activities, Marin County shall implement the following measures listed below:

All projects undertaken while carrying out Safety Element implementation programs shall be required to conduct a *biological resources site assessment, prepared by* a qualified biologist, to determine whether the project will result in significant biological impacts. The assessment shall be submitted to the County for review as part of the discretionary permit approval process. The biological resources site assessment shall include the following:

- The presence or absence of any sensitive biological resources that could be affected by proposed activities, including occurrences of special-status species, occurrences of sensitive natural communities, jurisdictional wetlands, and important wildlife nursery areas and movement corridors;
- Recommendations for protocol-level surveys if necessary to determine presence or absence of special-status animal or plant species, as needed;
- Impact assessment of the proposed activities on sensitive biological resources;
- Mitigation measures for avoidance of harm or removal of sensitive biological resources (e.g., avoidance of sensitive biological periods such as the bird and bat breeding season and bat winter torpor season), and compensation for the loss of sensitive biological resources such that there is no net loss of sensitive habitat acreage, values, and function.

The County shall review the results of the biological resources site assessment to determine whether impacts to Special-Status Species are likely to occur and the actions needed to avoid identified impacts, as well as to determine if additional County permits are required, and the appropriate level of CEQA review.

With implementation of Mitigation Measure 7-1, impacts of the Safety Element Update to Special-Status Species would be **less than significant**.

**Impact 7-2: Impacts on Riparian Habitat, Sensitive Natural Communities, and Wetlands.** [Thresholds of Significance (b) and (c)] Development facilitated by the Project could occur on undeveloped or partially developed sites in proximity to riparian areas, wetlands, and sensitive natural communities. This could have a substantial adverse effect on these areas and communities and is therefore considered a ***potentially significant impact***.

### **Housing Element Update Impacts**

As shown in Figures 7.1 and Exhibits 4.6-1 and 4.6-5 of the 2007 CWP Update DEIR, the Planning Area supports riparian habitat and natural communities that may be classified by

CDFW as sensitive, and wetlands. Some, though not all, of the candidate housing sites are in proximity to these resources. The Housing Element Update would not directly develop any of the candidate housing sites; however, it would promote and facilitate the development of these sites. Such development would likely have little to no impact on existing developed sites lacking natural habitats but could potentially impact sensitive resources on sites that are not developed and contain natural conditions, or are in proximity to undeveloped sites containing natural conditions. Because site-specific existing conditions related to biological resources at the candidate housing sites is unknown, development of housing projects, if and when applied for, would require site-specific assessments to assess what resources are or may be present. Not all riparian areas, sensitive natural communities, and wetlands are shown on Figures 7.1 or Exhibits 4.6-1 and 4.6-5 of the 2007 CWP Update DEIR. Site assessments and more detailed vegetation mapping would elucidate whether sensitive resources are present on the individual sites. Should riparian areas, sensitive natural communities, or wetlands be present, development that impacts these resources would be **significant**.

Housing projects that would be facilitated by adoption of the Housing Element Update would be required to comply with all State and federal laws protecting sensitive biological resources, obtain permits from the relevant regulatory agencies if the projects impact these resources, and comply with all mitigation requirements (see Regulatory Setting section). The 2007 CWP includes many previously adopted policies and implementing programs that serve to protect and preserve riparian habitats, sensitive communities, and wetlands with respect to development. Program BIO-2.a, Program BIO-3.c, and Program BIO-4.g, require site assessments for development projects if there is any potential for jurisdictional wetlands, sensitive natural communities, riparian areas, stream conservation areas, and wetland conservation areas to be impacted. The site assessments would include an evaluation of potential impacts on the sensitive resources and measures to protect those resources.

Other policies provide measures to protect sensitive resources. Policy BIO-1.1 requires protection of wetlands and sensitive natural communities through environmental review of development applications and consideration of cumulative impacts. Policy BIO-2.3 requires preservation of ecotones, especially along wetlands, riparian corridors, and other sensitive natural communities. Policy BIO 2.7 requires protection of sensitive coastal habitat including coastal wetlands. Policy-3.1 also requires protection of wetlands. Policy BIO-2.1 requires environmental review and adequate mitigation, and Policy BIO-3.2 and Program BIO-3.e. require thorough mitigation and list the wetland mitigation criteria. Policy BIO-2.8 and BIO-2.9 require consultation and coordination with trustee agencies and other agencies when riparian areas, wetlands, and sensitive natural communities may be present to evaluate the agencies' review authority. Policy BIO-2.2 restricts development in riparian areas and sensitive communities.

Other additional 2007 CWP measures also provide protection for riparian areas, wetlands, and sensitive natural communities including Program BIO-3.b, Program BIO-3.d, Policy BIO-4.1, Policy BIO-4.2, Policy BIO-4.4, Policy BIO-4.19, Policy BIO-4.20, Program BIO-4.e, Program BIO-4.f, Program BIO-4.h, Program BIO-4.i, Policy BIO-5.1, Policy BIO-5.2, and Policy BIO-5.3 (see Regulatory Setting section above). Because the County and prospective applicants will comply with all of the previously adopted policies and programs, the Project will be consistent with the 2007 CWP. Furthermore, because these policies and programs require thorough environmental review; site-specific analysis of sensitive communities and wetlands; and impact analysis, mitigation, and agency consultation and coordination, potential impacts of the Housing Element Update on sensitive communities and wetlands will be **less than significant**.



**Safety Element Update Impacts**

Adoption of the Safety Element Update itself would result in policies and programs that may impact these biological resources. Specific Safety Element proposed revised and new policies and programs that may impact riparian habitat, sensitive natural communities, and wetlands are those policies/programs that would require vegetation management, improvements to emergency access and evacuation routes, and construction or improvements to flood protection/flood armoring infrastructure. New or revised policies that may impact those sensitive resources include the following:

## Revised

- **EHS-4.1e** Restrict Development in Flood Prone Areas to Minimize Inundation.
- **EHS-5.3d** Restrict Land Divisions.
- **EHS-5.5a** Require Adequate Clearance Vegetation Removal.
- **EHS-5.5c** Develop and Maintain Fuel Breaks and Vegetation on Access Routes.

## New

- **EHS-2.3.f** Encourage Road Improvements.
- **EHS-2.4.d** Create New Evacuation Routes.
- **EHS-2.4.e** Ensure Access to New Development. Require new development to include adequate roadway ingress/egress for emergency access and evacuation routes.
- **EHS-4.5.a** Provide Flood Reduction Information Resources. (proposed).
- **EHS-4.6.a** Protect and Ensure Continued Operation of Critical Public Facilities.

Direct impacts could occur through removal of vegetation in riparian areas and other sensitive habitats or replacement of natural stream banks and sensitive habitat with infrastructure. Removal of woody vegetation in riparian areas, wetlands, or other sensitive aquatic habitats would be considered a direct permanent impact because regeneration of such habitat typically exceeds one year. Removal of herbaceous vegetation in these habitats is generally considered to be a temporary impact, as long as it is not replaced by permanent infrastructure. Indirect impacts on water quality in streams, wetlands, and other sensitive aquatic habitats could occur through runoff of pollutants or erosion and sedimentation resulting from construction activities and vegetation removal within or adjacent to these sensitive habitats. Additionally, vegetation management activities could introduce and increase the spread of non-native invasive plants carried by equipment, a permanent ***indirect impact***.

The County will comply with several previously adopted 2007 CWP policies and programs that aim to protect riparian areas, sensitive natural communities, and wetlands. These policies and programs are Policy BIO-1.3 Protect Woodlands, Forests, and Tree Resources, Policy BIO-2.8, Policy BIO-2.9, Policy BIO-3.2 Require Thorough Mitigation, Policy BIO-4.20 Minimize Runoff, Program BIO-4.i Replace Vegetation in SCAs, and Policy BIO-5.3 Leave Tidelands in Their Natural State. The County will also ensure that the Marin County Native Tree Preservation and

Protection Ordinance and the Stream Conservation Area Ordinance for the San Geronimo Valley will be complied with. Additionally, adoption of several proposed policies and implementing programs will also protect riparian areas, sensitive natural communities, and wetlands. Those proposed policies and programs are as follows: Implementing Program EHS-4.i ~~5.5.b Use Varied~~ Implement Ecologically Sound Methods of Vegetation Management to Provide Fuel Breaks and Fire Suppression., Policy EHS-4.2 Retain Natural Conditions, Implementing Program EHS-6.1.h Use Environmentally Sensitive Adaptation Strategies, and Implementing Program EHS-6.3.i Limit Seawall Barriers.

However, even if previously adopted policies/programs and proposed beneficial policies/programs are adopted, potential impacts of Safety Element policies and programs are unknown because no specific projects are identified in the Safety Element Update. Therefore, adoption and implementation of the Safety Element Update could indirectly impact riparian habitat, sensitive natural communities, and wetlands, and other aquatic habitats. Without implementation of Mitigation Measure 7-2 this could result in a **potentially significant impact** on these resources. The following new policies and programs shall be implemented to avoid and minimize impacts on riparian habitats, sensitive natural communities, and wetlands.

**Mitigation Measure 7-2: Best Management Practices for vegetation management in riparian areas, wetlands, and sensitive natural communities.**

For fire safety implementation projects (e.g., fuel load reduction) of any size where sensitive biological resources may occur, the County and/or contractors shall prepare a Construction Management Plan (CMP) for projects that involve vegetation removal within or in proximity to riparian areas, wetlands, and sensitive natural communities. The CMP shall include Best Management Practices (BMPS) that protect these habitats. The CMPs may include, but are not limited to, the following BMPs:

- Setbacks from riparian areas, wetlands, and other sensitive areas where work should be avoided.
- Field delineation of sensitive habitats as Environmentally Sensitive Areas to avoid.
- Identification of sensitive areas where work should be done by hand rather than with heavy machinery
- Measures to control and prevent the discharge of potential pollutants, including solid wastes, paints, concrete, petroleum products, chemicals, wash water or sediment and non-stormwater discharges to storm drains and water courses.
- Restrictions on cleaning, fueling, or maintaining vehicles on site, except in a designated area in which run-off is contained and treated.
- Erosion control measures for wet season work (October 15 through April 15).
- Measures to store, handle, and dispose of construction materials and wastes properly, so as to prevent their contact with stormwater.
- Measures to avoid the invasion and/or spread of noxious weeds.

Implementation of this mitigation measure would reduce impacts of the Safety Element Update on riparian habitat, state or federally-protected wetlands, or other sensitive natural communities to a ***less-than-significant level***.

**Impact 7-3: Impacts on Wildlife Movement Corridors and Wildlife Nursery Sites.**  
[Threshold of Significance (d)] Development facilitated by the Project could interfere with the movement of wildlife or result in the loss or reduction of undeveloped or underutilized land that provides movement corridors for wildlife species. In addition, development activities could impair or destroy breeding sites, including the taking of active bird nests and bat maternity roosts. Also, development occurring in proximity to potential movement corridors could potentially increase the risk of bird-building collisions. This is considered a ***potentially significant impact***.

### **Housing Element Update Impacts**

Development of individual housing sites, if and when applied for, may have a significant impact on movement corridors and nursery sites. Development within or in proximity to riparian corridors and inland and coastal wetlands could have a significant impact on movement corridors and nursery sites because these habitats are disproportionately small compared to other habitats in the Planning Area, and many species only occur and breed in these types of habitats. Adoption of the Housing Element Update would not directly develop the proposed housing sites but would make feasible the development of these sites in the future. Impacts that may result from adoption of the Housing Element include loss of or reduction of undeveloped or underutilized land that provides movement corridors for wildlife species, loss, or reduction of breeding sites, and take of active bird nests and bat maternity roosts. Additionally, development near potential movement corridors can potentially increase the risk of bird-building collisions (where birds fly into glass windows), especially in or near areas that attract large numbers of birds. Thus, implementation of the Housing Element Update has the potential to ***significantly impact*** wildlife movement corridors and nursery sites.

Individual housing projects that would be facilitated by adoption of the Housing Element Update would be required to comply with all State and federal laws protecting nesting birds (see Regulatory Setting section), and comply with CEQA, which would require an analysis of impacts on movement corridors and nursery sites. Additionally, projects would be required to comply with previously adopted policies in the 2007 CWP that would protect and preserve wildlife movement corridors and nursery sites. These policies include Policy BIO-1.1, Policy BIO-1.3, Policy BIO-2.1, Policy BIO-2.2, Policy BIO-2.3, Policy BIO- 2.4. and Policy BIO-2.7. These policies promote protection of movement corridors, nursery sites, and other areas that may provide these functions. Policy BIO-2.a requires site assessments for development applications that may adversely affect wildlife movement corridors and nursery sites. Policy BIO-2.b requires a comprehensive habitat connectivity assessment and for the development of recommendation for policies to protect corridors and improve plant and wildlife dispersal. Policy BIO-2.e requires participation in the FishNet4C Program to continue to improve and restore aquatic habitat for

fish. Policy BIO-5.2 ensures that development does not create barriers to food, water, or shelter for wildlife. It also requires an environmental assessment specifically where development is proposed in the Baylands Corridor. Policy BIO-2.5 restricts disturbance of nesting habitat during the nesting season; however, the timing of the nesting season in this policy requires updating so that it is consistent with the typical nesting season of most birds in Marin County. Additionally, existing policies do not pertain to potential impacts associated with avian building collisions. Without the addition of Mitigation Measure 7-3.1 and Mitigation Measure 7-3.2, development that results from adoption of the Housing Element is considered a ***potentially significant impact***.

### **Safety Element Update Impacts**

Although adoption of the Safety Element Update would not directly impact wildlife movement corridors or nursery sites, it could make feasible the implementation of various activities in areas used as movement corridors and nurseries. Noise and disturbance related to Safety Element activities such as vegetation management or construction of infrastructure or climate mitigation projects could potentially change movement and foraging patterns of certain wildlife. For example, certain wildlife may temporarily avoid established movement and foraging routes during vegetation management activities. Wildlife may also avoid these areas after Safety Element activities are completed if shelter and forage are decreased. Vegetation management could increase stream temperatures or impact water quality through erosion, sedimentation, or contaminants, which could have detrimental effects on native resident and anadromous fish. Wildlife nursery sites could be impacted during vegetation management and construction activities. Noise and disturbance associated with Safety Element activities could cause nesting birds and roosting bats to abandon those sites, leading to mortality of dependent young. Safety Element activities could also result in direct injury or mortality of nesting birds and roosting bats.

As described above, projects that would be facilitated by adoption of the Safety Element Update would be required to comply with all State and federal laws protecting nesting birds, and State and federally protected fish and wildlife species and their habitat (see Regulatory Setting section). Additionally, if Safety Element activities under discretionary review may affect fish and wildlife habitat, those projects would be required to comply with CEQA, which would require an analysis of impacts on movement corridors and nursery sites.

Additionally, projects would be required to comply with previously adopted policies in the 2007 CWP that aim to protect and preserve wildlife movement corridors and nursery sites relative to Safety Element activities. Policy BIO-2.4 promotes protection of movement corridors and nursery sites as a condition of discretionary permits, including consideration of cumulative impacts.

Adoption of proposed policy EHS-4.i ~~5.5.b Use Varied~~ Implement Ecologically Sound Methods of Vegetation Management to Provide Fuel Breaks and Fire Suppression may address vegetation management impacts on wildlife movement corridors and nursery sites, but it is undetermined whether the policy would reduce impacts to less than significant.

While housing development facilitated by the Housing Element Update and environmental protection projects undertaken through Safety Element Update implementation programs would be required to comply with previously adopted policies and State and federal laws protecting nesting birds, and state and federally-protected fish and wildlife species and their habitat, existing policies and regulations do not specifically focus on reducing impacts from vegetation clearing and long-term vegetation management that would occur to meet current defensible

space requirements in high fire hazard severity zones around buildings and along road corridors. Current vegetation management practices could remove, degrade, or disturb wildlife movement corridors without additional avoidance and minimization measures specific to these activities. Therefore, the impacts to wildfire corridors and nursery sites from vegetation management is considered a ***potentially significant impact***.

### **Mitigation Measure 7-3.1. Revise Definition of the Nesting Season**

Adopted Policy BIO-2.5 in the Natural Systems and Agriculture Element of the 2007 CWP defines the avian nesting season as March 1 through August 1. However, the nesting season in Marin County is generally defined as February 1 through August 31. Unless this policy is amended, future individual development projects resulting from the Housing Element Update have the potential to take active nests of birds protected by the Migratory Bird Treaty Act and California Fish and Game Code. Therefore, the County shall revise this policy as follows:

**Policy BIO-2.5 (revised)** Restrict Disturbance in Sensitive Habitat During the Nesting Season. Limit construction and other sources of potential disturbance in sensitive riparian corridors, wetlands, and Baylands to protect bird nesting activities. Disturbance should generally be set back from sensitive habitat during the nesting season from February 1 through August 31 to protect bird nesting, rearing, and fledging activities. Preconstruction surveys should be conducted by a qualified professional where development is proposed in sensitive habitat areas during the nesting season, and appropriate restrictions should be defined to protect nests in active use and ensure that any young have fledged before construction proceeds.

### **Mitigation Measure 7-3.2 Bird-Safe Design.**

The County shall establish design standards for new construction and redevelopment projects to implement bird-safe features to prevent or reduce avian collision risks with glass windows. Consistent with the American Bird Conservancy recommendations, the County shall specify thresholds when standards would apply, such as site location relative to avian habitat and amount of contiguous glass proposed on building facades. If projects meet or exceed the thresholds, the County shall require application of bird-safe design features including, but not limited to, window treatments, glass treatments, and landscaping and lighting modifications. The County or project applicants shall obtain a qualified biologist, with experience in avian ecology, to evaluate proposed building plans and bird-safe design features, where applicable. If the proposed bird-safe design does not sufficiently address collision risks, the biologist shall provide additional bird-safe design recommendations that shall be incorporated.

### **Mitigation Measure 7-3.3. Implement Protective Buffers During Vegetation Management.**

To protect wildlife movement corridors and wildlife nursery sites from removal, degradation, or substantial long-term disturbance, the County shall minimize vegetation management activities to the greatest extent feasible and implement protective buffers, or specify vegetation management and removal methods to protect wildlife movement corridors and avoid disturbance of wildlife nursery sites.

With implementation of Mitigation Measures 7-3.1, 7-3.2, and 7-3.3, impacts of the Housing and Safety Element Update would be ***less than significant***.

**Impact 7-4: Conflicts with Local Policies or Ordinances Protecting Biological Resources.**

[Threshold of Significance (e)] Adoption of the Project would make feasible new housing development and Safety Element activities that could result in the removal of an unknown number of trees, some of which may qualify as protected trees under the Marin County Native Tree Preservation and Preservation and Protection Ordinance. Similarly, the Project could result in impacts on streams subject to the recently adopted Stream Conservation Area Ordinance for San Geronimo Valley. However, the County and other project proponents would be required to comply with these ordinances. The County and project proponents would also be required to comply with existing 2007 CWP policies and programs listed above in Section 7.1.3 as applicable that require local planning and development decisions to consider impacts to biological resources. Therefore, there is **no impact** related to this significance criteria.

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**Impact 7-5: Conflicts with adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other conservation plans.**

[Threshold of Significance (f)] No Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or State habitat conservation plans are present in the Planning Area. The County participates in the FishNet4C Program (Policy BIO-2.e), which is a County-based, regional salmonid protection and restoration effort intended to meet the requirements of the Federal ESA in protecting anadromous salmonids and their habitats. The County would continue to participate in this program and ensure that projects that are implemented through the adoption of the Housing Element and Safety Element Update would not conflict with this program. Therefore, there is **no impact** related to conflicts with adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other conservation plans.

**Cumulative Biological Resources Impacts**

Future development of candidate housing sites and implementation of Safety Element projects that would be facilitated by adoption of the Housing and Safety Element Update, in conjunction with other types of private development and public projects occurring in the unincorporated County, could potentially result in cumulative impacts to biological resources (special-status species and their habitats, sensitive natural communities, wetlands, wildlife movement corridors, and wildlife nursery sites).

Development of candidate housing sites facilitated by adoption of the Housing Element Update would increase housing development in developed and undeveloped areas and could result in cumulative impacts to sensitive biological resources, for example through loss of vegetation, alteration of creeks and drainages, and disruption of wildlife movement corridors. Candidate housing sites in currently developed parcels provide limited value for biological resources because they are already developed. However, undeveloped parcels and developed parcels that are adjacent to undeveloped areas that may support biological resources could be impacted by future development.

Implementation of Safety Element programs that result in ground or vegetation disturbing activities or construction/rehabilitation of public or private infrastructure could also contribute to cumulative impacts to sensitive biological resources.

Potential development impacts on sensitive biological resources would be avoided or minimized through adopted 2007 CWP policies and implementing programs (See 7.1.3 above), and revised and new implementing programs protecting these resources proposed in the Project

(See 7.2 above), and implementation of Mitigation Measures 7-1, 7-2, 7-3.1 and 7-3.2. Additionally, housing development and all Safety Element related projects are subject to federal, State, regional, and local regulations protecting biological resources.

Development of candidate housing sites and Safety Element projects that have the potential to impact biological resources would also require biological evaluation on a case-by-case basis at the project level when future projects are proposed, and each project requiring discretionary approvals would require evaluation under CEQA. The CEQA analysis would evaluate the potential impacts on biological resources and would analyze the project's contribution towards cumulative impacts on sensitive biological resources.

Projects that have the potential to impact the environment would be evaluated for consistency with Policies BIO-1.1 and BIO-2.4 of the Natural Resources Element of the 2007 CWP, which require consideration of cumulative impacts on biological resources during environmental review and would follow existing and adopted implementing programs to protect biological resources and any necessary regulatory permit requirements.

Through environmental review, implementation of existing and new implementing programs, consistency with existing and new 2007 CWP policies and implementing programs, mitigation measures herein (Mitigation Measures 7-1, 7-2, 7-3.1, 7-3.2, and 7-3.3), and compliance with regulatory requirements, the Housing and Safety Element Update's contribution to cumulatively considerable impacts on biological resources would be **less than significant**.

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## 8. CULTURAL, TRIBAL CULTURAL, AND HISTORICAL RESOURCES

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Cultural, Tribal Cultural, and Historical Resources. <i>Would the project:</i></b>				
a) <i>Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?</i>	<b>X</b> <b>(part)</b>		<b>X</b> <b>(part)</b>	
b) <i>Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?</i>			<b>X</b>	
c) <i>Disturb any human remains, including those interred outside of dedicated cemeteries?</i>			<b>X</b>	
d) <i>Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</i>				
<i>1) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or</i>			<b>X</b>	
<i>2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?</i>			<b>X</b>	

This EIR chapter describes the the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, discusses Project goals, policies, and implementation programs that would avoid or reduce those potential impacts, and identifies mitigation measures as needed to reduce significant impacts.

<sup>1</sup>State CEQA Guidelines, Appendix G, items V (a) through (c) and XVIII (a) and (b).

## 8.1 ENVIRONMENTAL SETTING

### 8.1.1 Prehistoric and Historical Resources

A. Early Settlement and Recent History. Marin County is the traditional territory of the Coast Miwok, which consisted of many culturally specific groups that inhabited various areas of Marin County. The Coast Miwok tended to settle in areas near water, such as along the bayshore and perennial streams, and near oak woodlands where food sources were most readily available,<sup>2</sup> such as fish; large game animals like bear, elk, and deer; small animals like rabbit, wood rats, gophers, and squirrels; and both land birds and aquatic birds. Among other food items were acorns and fresh or cooked greens.<sup>3</sup>

Pre-contact villages were located on the Point Reyes Peninsula and on Belvedere and DeSilva islands.<sup>4</sup> Along the shores of Bolinas, Tomales, and Drakes bays as well as near the historic Hamilton Air Force Base and Miller Creek, settlements or villages were often built on top of or near man-made shell mounds.<sup>5</sup> A large pre-contact village was Olompali, located within the modern Olompali State Historic Park.<sup>6</sup>

Tribal organization was loosely structured, though larger villages had a chief (*hóypu*). Healing and healers were important, in part because of the risk of poisoning from foods. Though there were designated specialists to treat different ailments, the “old dancers” were thought more effective.<sup>7</sup>

Informal and individual dancing and singing occurred to celebrate even small game animal kills or sometimes to cure illness. Dances or ceremonies were held for the bear, deer, and salmon, for luck during a hunt, to harvest, for animal or spirit impersonation, and for no identified purpose except to partake in the activity itself.<sup>8</sup>

Coast Miwok sites in Marin County included areas near sources of fresh water or where they were protected from wind. Some sites served as seasonal hunting locations or places for gathering. But other sites were larger, called *rancherías* by the Spanish, and could have as many as five to ten dwellings that accommodated 30 to 60.<sup>9</sup>

Dwellings were conical and built on a frame made of willow poles or driftwood, and covered with grass. More poles were used to add support both vertically and horizontally. Dwellings could

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<sup>2</sup>Fanning, Branwell. 2007. Marin County (Image of America), South Carolina. Arcadia Publishing, p. 7.

<sup>3</sup>Kelly, Isabel. 1978. “Coast Miwok,” in R.F. Heizer (ed.) Handbook of North American Indians. Vol. 8: California: 414. Washington D.C. Smithsonian Institute.

<sup>4</sup>Marin Countywide Plan, “Cultural Resources Technical Background Report,” February 2003.

<sup>5</sup>Hoover, Mildred, et al., revised by Douglas Kyle, Historic Spots in California, Stanford University Press, 2002.

<sup>6</sup>Federated Indians of Graton Rancheria, <https://gratonrancheria.com/culture/history/>, accessed 9/21/22.

<sup>7</sup>Kelly, Isabel. 1978. “Coast Miwok,” in R.F. Heizer (ed.) Handbook of North American Indians. Vol. 8: California: 414. Washington D.C. Smithsonian Institute.

<sup>8</sup>Kelley (Heizer).

<sup>9</sup>Goerke, Betty, Chief Marin: Leader, Rebel, and Legend, Heyday Books, Berkeley, CA, 2007.

accommodate six to ten.<sup>10</sup> The larger villages often had a communal house, sometimes known as an assembly house, dance house, or round house, that was semi-underground.<sup>11</sup>

The first Euroamerican contact came with Sir Francis Drake in 1579 and his encounter with the Coast Miwok at a site approximately 25 miles north of the Golden Gate, later named for Drake (“Drake’s Bay”). The next Euroamerican contact following Drake was a Spanish explorer, Sebastian Rodriguez Cermeño, about 16 years after Drake.<sup>12</sup> The next contact between the Coast Miwok and Euroamericans occurred after Juan Manuel Ayala sailed into San Francisco Bay in 1775.

The Spanish extended their mission and presidio system into Marin County and founded Mission San Rafael in 1817 initially as a “sub-mission” (an *asistencia*) which was later elevated to “full” mission status in 1822. At first, the Coast Miwok were taken to the mission at San Francisco, but later to the missions at San Rafael and Sonoma (Mission San Francisco Solano), built in 1823. Members of the Lake Miwok were also assembled at these missions, along with the neighboring Pomo, Wintun, and Wappo tribes, and all were forced to work at the missions.<sup>13</sup>

Mexico gained its independence from Spain in 1821, and afterward the missions were secularized. Large land grants were awarded, including the approximately 9,000-acre Rancho Olompali, which was the only grant bequeathed to a Native American, Chief Camilo Ynitia.<sup>14</sup> This land would later become Olompali State Historic Park, in 1977. The remainder of the County was comprised of 20 other land grants.

In 1846, Americans who had immigrated to California proclaimed their independence from Mexico. During the resulting Bear Flag revolt, resistance among Californians and sporadic hostilities occurred in parts of California through the rest of the year. In early 1847, John C. Frémont accepted the surrender of Pio Pico, the last Governor of Mexican California. With the Treaty of Guadalupe Hidalgo in 1848, California was officially annexed into the United States. California became a state in 1850, and Marin County was one of the original 27 counties, with the city of San Rafael as the County seat.

After the 1849 California Gold Rush, the dairy industry in Marin County was established as ranchers replaced Mexican longhorn cattle with American stock.<sup>15</sup> Notable examples of this transition were seen on large ranches on the Point Reyes peninsula that were primarily involved in the dairy industry. Other valuable economic endeavors in the County included shellfish production and lumber milling, and later brick making.

In the 19<sup>th</sup> century, growth in the County was steady with the population in 1850 recorded as 323 and rising to 11,324 in 1880. In contrast, the population of nearby San Francisco in 1880

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<sup>10</sup>Kelley (Heizer).

<sup>11</sup>Goerke.

<sup>12</sup>Kelley (Heizer).

<sup>13</sup>Kroeber, A.L. 1976. Handbook of the Indians of California, New York. Dover Publications, Inc., p. 275.

<sup>14</sup>Futcher, Jane. 1981. Marin: The Place, The People, New York. Holt, Rinehart and Winston. p. 151.

<sup>15</sup>U.C. Agriculture and Natural Resources, “Grown in Marin: History of Marin Agriculture,” [https://growninmarin.org/About\\_Marin\\_Agriculture/Facts\\_and\\_Figures/Historical\\_Roots\\_of\\_Marin\\_Agriculture\\_874/](https://growninmarin.org/About_Marin_Agriculture/Facts_and_Figures/Historical_Roots_of_Marin_Agriculture_874/), accessed 6/6/22.

was 233,959.<sup>16</sup> Communities in Marin County tended to form around railroad lines or along waterways where boats could dock.<sup>17</sup> In the 1930s, U.S. Highway 101 (U.S. 101) was completed, which replaced the original, winding “State Highway” (so designated in 1909) with a more direct route through the county.<sup>18</sup> The importance of this highway became evident with the completion of the Golden Gate Bridge in 1937, effectively bringing about the demise of railroad and ferry passenger service in the area until a recent modern revival supporting commuters traveling between Sonoma and Marin counties and San Francisco.<sup>19</sup>

After World War II, the pace of development in the County accelerated. Dairy ranches were converted into residential subdivisions and resorts. Concerns about increased building along the coast, where development had been present for many years prior, helped prompt the creation of the Golden Gate National Recreation Area and the Point Reyes National Seashore in 1972, which curbed coastal development.<sup>20</sup>

**B. Post-Mission-Era Coast Miwok Presence.** After the secularization of the missions, the Coast Miwok were granted some former mission lands near Nicasio in 1835, where approximately 500 tribal members settled. But by 1850, lands granted to Coast Miwok were confiscated, eventually reducing their land to about 4,000 acres. In 1861, the U.S. Congress extinguished Native American title to almost all land in California. Coast Miwok and Southern Pomo found work on farms in Marin and Sonoma counties, though the work was seasonal and required traveling.<sup>21</sup>

By the early 1900s, tribal members formed settlements in coves north and south of Laird’s Landing, at the Landing, and at Pelican Point on the west side of Tomales Bay.<sup>22</sup> In 1920, a 15.45-acre tract of land in Graton was bought by the Bureau of Indian Affairs for the Marshall, Bodega, Tomales, and Sebastopol Indians. The land was put into Federal trust, and the consolidated group was recognized as one entity, Graton Rancheria.<sup>23</sup> Still, tribal communities also inhabited the same locations as over past centuries, at Bodega and Bodega Bay and on both shores of Tomales Bay.<sup>24</sup>

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<sup>16</sup>Marin Independent Journal, “Highlights of Marin’s history, from 1850-2010,” March 23, 2011. <https://www.marinij.com/2011/03/23/highlights-of-marins-history-from-1850-2010/>, accessed 6/6/22.

<sup>17</sup>Fanning, Branwell. 2007. *Marin County (Image of America)*, South Carolina. Arcadia Publishing, p. 35.

<sup>18</sup>Wood, Jim, *Marin Magazine*, “History of a Highway,” April 17, 2009. <https://marinmagazine.com/community/history/history-of-a-highway/>, accessed 6/6/22.

<sup>19</sup>Fanning, Branwell. 2007. *Marin County (Image of America)*, South Carolina. Arcadia Publishing, p. 93.

<sup>20</sup>Futcher, Jane. 1981. *Marin: The Place, The People*, New York. Holt, Rinehart and Winston. p. 6. Also, as a note, although the Point Reyes National Seashore was authorized by the U.S. Congress in 1962, it would not be officially established until 10 years later when sufficient funds were appropriated (U.S. Department of the Interior, National Park Service, “A Bright Star in the Conservation Galaxy,” <https://www.nps.gov/articles/000/point-reyes-a-bright-star-in-the-conservation-galaxy.htm>, accessed 6/6/22).

<sup>21</sup>Federated Indians of Graton Rancheria (FIGR), <https://gratonrancheria.com/culture/history/>, accessed 9/21/22.

<sup>22</sup>Goerke.

<sup>23</sup>FIGR, <https://gratonrancheria.com/culture/history/>, accessed 9/21/22.

<sup>24</sup>Goerke.

In 1924, Congress granted all Native Americans born in the United States full American citizenship. However, in 1958, Congress terminated 41 California rancherias, including the Graton Rancheria, which was removed from Federal trust. It took until the 1990s before continued efforts by tribal members and other supporters persuaded Congress to re-establish the Graton Rancheria's Federal status. At that time, the Tribe totaled 152 members. In 2000, President Bill Clinton signed into law the legislation that restored recognition to the Federated Indians of Graton Rancheria.<sup>25</sup>

C. Prehistoric Archaeological Resources. Prehistoric archaeological sites are commonly found near historical water courses, which provided a consistent source of fresh water and created environments rich in floral and faunal resources. Prehistoric archaeological resources found at such sites often include features such as middens; bedrock milling stations; dark friable soil deposits containing shell and bone, dietary debris, or heat-affected rock; and human burials. Artifacts such as chert or obsidian flakes, projectile points, and mortars and pestles are also often found at archaeological sites, either as isolates or as part of a larger deposit. As noted by anthropologist Alfred Kroeber: "In the region of Ignacio and Novato, hills and bay sloughs are still in proximity, and there are records of several settlements as well as abundance of shell deposits. ...It was evidently more convenient to live in the open, close to the supply of mussels, clams, fish, and waterfowl, and occasionally visit the hills to hunt, than to live in the shade inland."<sup>26</sup>

The presence of various archaeological sites such as shell middens have been recorded by archaeologists and listed in the California Archaeological Inventory. The sites include dune areas or areas adjacent to drainages where Native American camps or villages were likely to have been located<sup>27</sup> and also in some valley areas.<sup>28</sup> The State of California has officially recorded 630 archaeological sites in Marin County, and this number undoubtedly does not reflect the actual number of sites as privately owned parcels, especially in the central County, are not open for examination by archaeologists, and therefore the distribution and frequency of currently recorded sites may not reflect the distribution of all sites.<sup>29</sup>

Although urban development has continued in the County, especially along the U.S. 101 corridor and San Francisco/San Pablo bays, unrecorded prehistoric cultural resources likely exist in the Planning Area.

D. California Historical Resources. Historical resources in California include cultural and historical landscapes comprised of archaeological remains, historic buildings, traditional customs, tangible artifacts, historical documents, and public records. The State Office of Historic Preservation (OHP) administers historic preservation programs, which assist in furthering identification, evaluation, registration, and protection of irreplaceable archaeological and historical resources in California. Some of the catalogued resources include:

- California Historical Landmarks. These are buildings, sites, features, or events of statewide significance and have anthropological, cultural, military, political, architectural, economic,

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<sup>25</sup>FIGR, <https://gratonrancheria.com/culture/history/>, accessed 9/21/22.

<sup>26</sup>Kroeber, A.L. 1976. Handbook of the Indians of California, New York. Dover Publications, Inc., p. 273.

<sup>27</sup>Dillon Beach Community Plan, August 1989, p. 4-12.

<sup>28</sup>Kent Woodlands Land Use Policy Report, as amended September 10, 1996, p. IV-17.

<sup>29</sup>Marin Countywide Plan, "Cultural Resources Technical Background Report," February 2003, p. 1.

## 8. Cultural, Tribal Cultural, and Historical Resources

scientific, technical, religious, experimental, or other historical value. The following sites have been identified as California Historic Landmarks in Marin County:<sup>30</sup>

- No. 207 – First Sawmill in Marin County: This mill was erected by John Reed around 1833-34 on Rancho Corte Madera del Presidio (“the wood cutting place for the Presidio”), in present-day Mill Valley (plaque located at northwest corner of Blithedale Avenue and Tower Drive).
- No. 210 – Camilo Ynitia Adobe: Formerly known as "Oldest House North of San Francisco Bay," the Camilo Ynitia Adobe is named in recognition of the only U.S. land grant owned and maintained by a Native American in Alta California. Reportedly built as a one-room adobe in 1776, construction more likely began in 1834.<sup>31</sup> Located in Olompali State Historic Park.
- No. 220 – Mission San Rafael Arcángel: The San Rafael Arcángel Mission was 20<sup>th</sup> in the chain of the 21 California missions and was established in 1817 by the Franciscan Order. Though the buildings gradually fell into ruin after secularization, the mission was reconstructed on its original site in 1949 (plaque located at northeast corner of Merrydale and southbound U.S. 101).
- No. 221 – Site of the Lighter Wharf at Bolinas: This wharf was built in the early 1850s to load lumber on lighters to be floated out to the deeper water near the channel, where it was transferred to seagoing vessels for shipment to San Francisco. Located at the north end of Bolinas Lagoon at the juncture of State Route (SR) 1 and Olema-Bolinas Road, about 2 miles north of Bolinas.
- No. 222 – Lime Kilns: These were traditionally considered to have been built by Russian stonemasons and worked by Native Americans during the Russian occupation of Marin beginning in the spring of 1812 and ending around 1841. Located about 300 feet west of SR 1, roughly 4 miles south of Olema.
- No. 529 – Angel Island: This island, which Spanish survey commander Lieutenant Juan Manuel de Ayala named Isla de Los Angeles in 1775, has been a Mexican rancho, a U.S. military post, a bay defense site, and a quarantine and immigration station; now it serves as Angel Island State Park. Located about 2 miles east of Sausalito and 0.7 miles east-southeast of Belvedere and Tiburon.
- No. 552 – Pioneer Paper Mill: The first paper mill on the Pacific Coast, built in November 1856 by Samuel Penfield Taylor, the mill originally used waterpower and later steam. It was closed due to the depression of 1893 and was eventually destroyed by fire in 1915. Located in Lagunitas, approximately 1.3 miles inside Samuel P. Taylor State Park, about 18 miles west of U.S. 101 off Sir Francis Drake Boulevard.

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<sup>30</sup>California Office of Historic Preservation, “Marin,” [https://ohp.parks.ca.gov/?page\\_id=21429](https://ohp.parks.ca.gov/?page_id=21429), accessed 6/5/22; in addition, OHP notes that landmarks numbered 770 and above are automatically listed in the California Register of Historical Resources.

<sup>31</sup>California State Parks, Office of Historic Preservation, Camilo Ynitia Adobe Historical Landmark, <https://ohp.parks.ca.gov/ListedResources/Detail/210>, accessed 9/22/22.



- No. 630 – St. Vincent's School for Boys: This school was founded in 1855 and has been maintained and expanded since by successive archbishops of San Francisco. Located on St. Vincent Drive, about 4 miles north of San Rafael.
- No. 679 – Home of Lord Charles Snowden Fairfax: The home of Charles Snowden Fairfax, pioneer and political leader of the 1850s, descendant of Scottish barons. Located at the site of the former Marin Town and Country Club in Fairfax, one block south of Pastori Avenue and Belmont Avenue. The site has added significance because of the famous duel that took place there between Charles Piercy and Daniel Showalter, two California assemblymen.<sup>32</sup> The duel was fought on May 25, 1861 to settle a disagreement, and personal insult, over California's legislative decision to side with the Union in the Civil War.
- No. 917 – Green Brae Brick Kiln: This brick kiln is the only surviving structure of the Remillard Brick Company, once the largest brick manufacturer on the Pacific Coast, with its bricks used to rebuild Ghirardelli Square, the Palace Hotel, and other San Francisco structures after the 1906 Earthquake. Located in Larkspur at 125 E Sir Francis Drake Boulevard.
- No. 922 – Outdoor Art Club: The Outdoor Art Club, founded in 1902 by 35 Mill Valley women and designed by Bernard Maybeck, is dedicated to preserving the area's natural environment. Located in Mill Valley at 1 W Blithedale Avenue at Throckmorton.
- No. 924 – China Camp: China Camp was in operation by 1870 and was one of the earliest, largest, and most productive Chinese fishing villages in California. It represents the last surviving Chinese shrimp fishing village in California. Located in Santa Venetia at the entrance to China Camp Village in China Camp State Park, on North San Pedro Road, approximately 5.3 miles southeast of U.S. 101.
- No. 974 – Golden Gate Bridge: Construction of the bridge started in 1933 and was completed in 1937. The bridge's 4,200 feet of clear span (from tower to tower) was the longest in the world until 1959. The Bridge spans the 1-mile-wide strait that connects San Francisco Bay to the Pacific Ocean and links San Francisco at the northern tip of the San Francisco Peninsula to the Marin Headlands at the southernmost part of Marin County. The northern portion of the bridge near the vista point and observation area is the California Historic Landmark in Marin County.
- No. 999 – Marin County Civic Center: The Civic Center Complex was designed by Frank Lloyd Wright. The Administration Building was completed in 1962 and the Hall of Justice in 1970. Located at 3501 Civic Center Drive in San Rafael; the plaque is in storage at the County Counsel's Office.
- California Points of Historical Interest. These are buildings, sites, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific, or technical, religious, experimental, or other historical value. Appendix E includes a table summarizing the resources listed by the State Historical Resources Commission in the California Register of Historic Places (CRHR); however, as

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<sup>32</sup>Sagar, William and Brian Sagar, Images of America, Fairfax, Arcadia Publishing, SC, 2005, p. 20.

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noted by OHP, this list is not comprehensive and may not include all resources listed in the CRHR.<sup>33</sup>

- California Register of Historical Resources (CRHR). This includes buildings, sites, structures, objects, and districts significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. As noted above, Appendix E includes a table summarizing resources in Marin County included in the CRHR by the State Historical Resources Commission.
- Built Environment Resources Directory (BERD). This database provides a list, organized by county, with information on non-archaeological resources in the OHP's inventory. The information is for cultural resources that have been processed through OHP and includes resources reviewed for eligibility for the National Register of Historic Places (NRHP) and the California Historical Landmarks programs through Federal and State environmental compliance laws, and also includes resources nominated under Federal and State registration programs. However, if a resource does not appear on the BERD, it does not mean the resource is not historically significant, but that the resource has not, to date, been processed through the OHP or that the resource is archaeological in nature and subject to confidentiality requirements. In addition, recorded resources not processed by the OHP may be on file at the appropriate California Historical Resources Information System (CHRIS) Information Center (IC) and available through the IC records search process.

The BERD search for Marin County includes approximately 2,600 listings, which includes listings for the incorporated cities and towns; for unincorporated County areas, there are approximately 626 listings for individual structures and other items. The listings indicate the status for historic designation or eligibility. Most of these listings are located in the Coastal Corridor (e.g., Tomales, Bolinas, Olema Valley, Point Reyes peninsula). The BERD database indicates several buildings and other structures in the Planning Area that are on the CRHR and/or NRHP or are eligible for listing on either.

E. National Register of Historic Places (NRHP). As part of the National Historic Preservation Act (NPHA) of 1966, the National Park Service maintains the NRHP as the official list of the nation's historic places worthy of preservation. The NRHP includes buildings, structures, objects, sites, and districts of local, state, or national significance in American history, architecture, archaeology, engineering, and culture. The NRHP database lists 52 individual building, structure, site, or district listings for Marin County, and is also included in Appendix E of this EIR.<sup>34</sup>

### 8.1.2 Candidate Housing Sites

As discussed in Chapter 3, Project Description, the Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Section 3.4.2(c) in Chapter 3, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of "candidate housing sites," which could allow development of up to 10,993 units. These candidate housing

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<sup>33</sup>California Office of Historic Preservation, "California Historical Resources," <https://ohp.parks.ca.gov/listedresources/>, accessed 6/5/22.

<sup>34</sup>U.S. Department of the Interior, National Park Service, National Register of Historic Places, <https://www.nps.gov/subjects/nationalregister/data-downloads.htm>, accessed 6/5/22.

sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts.

These sites are generally located along the west side of the county (the Coastal Corridor) from Tomales south to Stinson Beach; along the east side from the Novato area south to Marin City (the Baylands and City-Centered Corridors); around Nicasio; in the Lucas Valley-Marino area; and in the Lagunitas-Forest Knolls/San Geronimo/Woodacre area (the Inland Rural Corridor). Many of the proposed sites are in already-developed areas identified as being able to accommodate additional housing construction. For some sites, this would entail a zoning and land use designation change to allow the addition of housing, or in other cases (such as a larger parcel) a subdivision of the site. Though many of the proposed sites are located within areas that already have development, the potential disturbance of a cultural or historic resource cannot be determined at this time because location—and site-specific details related to future development projects—are unknown; whether or not a structure or site has historical significance or a structure requires removal or rehabilitation, or how much ground area might be disturbed, would be speculative until project plans are submitted. When project plans are submitted, additional environmental studies will be prepared, as required, to address the cultural resource sensitivity of specific proposed housing sites.

## 8.2 REGULATORY SETTING

### 8.2.1 Federal Regulations and Laws

**National Historic Preservation Act of 1966 (54 U.S.C. 300101 et seq., formerly 16 U.S.C. 470 et seq.) (NHPA).** This law was enacted to prevent unnecessary harm to historic properties. The NHPA includes regulations that apply specifically to Federal land-holding agencies, but also includes regulations (“Section 106”; 54 U.S.C. 306108) that pertain to all projects funded, permitted, or approved by any Federal agency that have the potential to affect cultural resources. Provisions of the NHPA establish a NRHP (maintained by the National Park Service); the Advisory Council on Historic Preservation; State Historic Preservation Offices; and Federal grants-in-aid programs.

**National Environmental Policy Act of 1969 (42 U.S.C. 4321 and 4331-4335, as amended) (NEPA).** The act establishes guidelines to “preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice.” All projects that are subject to NEPA are also subject to compliance with Section 106 of NHPA (54 U.S.C. 306108) and NEPA requirements concerning cultural resources.

**American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996 and 1996a, as amended) and Native American Graves and Repatriation Act of 1990 (25 U.S.C. 3001 et seq., as amended).** These acts establish as national policy that traditional religious practices and beliefs, sacred sites (including right of access), and the use of sacred objects shall be protected and preserved. Native American remains are further protected by the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990.

**Secretary of the Interior’s Standards.** The Secretary of the Interior is responsible for establishing professional standards and providing guidance related to the preservation and protection of all cultural resources listed in, or eligible for listing in, the NRHP. The Secretary of the Interior’s *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* and the Secretary of the

Interior's *Guidelines for Rehabilitating Historic Buildings* and the *Guidelines on Sustainability for Rehabilitating Historic Buildings* apply to all grants-in-aid projects assisted through the Historic Preservation Fund, and are intended to be applied to a wide variety of historic preservation and community projects and resources focused on heritage preservation, including buildings, structures, sites, objects, and districts.

**National Register of Historic Places (NRHP).** Archaeological and historical sites can be given a measure of protection if they are eligible for the NRHP. The criterion most often applied to archaeological sites addresses the potential of a site to yield information important in prehistory or history. The following NRHP criteria, and other information issued by the Advisory Council on Historic Preservation, present the legal measures of significance relevant to cultural resources:

- A. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. are associated with the lives of significant persons in our past; or
- C. embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack distinction; or
- D. have yielded, or may be likely to yield, information important to history or prehistory.

**Code of Federal Regulations (CFR) Title 43 CFR 8365.1-5.** This regulation addresses the collection of invertebrate fossils and fossil plants, including the willful disturbance, removal, and destruction of scientific resources or natural objects.

## 8.2.2 State Regulations and Laws

### **California Environmental Quality Act (Public Resources Code 21000 et seq.) (CEQA).**

Section 15064.5 of the State CEQA Guidelines (California Code of Regulations Title 14, section 15000 et seq.) requires lead agencies to determine whether proposed projects requiring discretionary government approval may have a significant effect on historical, archaeological, or tribal cultural resources. This determination applies to cultural resources that meet significance criteria qualifying them as "unique" or "of importance," or are listed or determined eligible for listing on the CRHR. If a project may have an adverse effect on a unique or important historical or cultural resource, the project is determined to have a significant effect on the environment, and the effect must be mitigated. Under CEQA, a historical resource need not be listed already on a local, State, or Federal list of historic resources to meet the CEQA impact criteria requiring mitigation.

The CEQA Guidelines specify that when a proposed individual project may adversely affect a CEQA-defined historical resource, the lead agency is required to carefully consider the possible project impacts on the historical resource before proceeding (Public Resources Code section 21084 and subsection 21084.1). In determining if there is a significant impact on one or more historical resources, the CEQA Guidelines essentially call for a two-part test: (1) is the resource "historically significant," and (2) would the project cause a "substantial adverse change" in the

significance of the resource? Under section 15064.5(a) of the CEQA Guidelines, a historical resource shall be presumed to be historically or culturally significant if it is:

- A. A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR (Public Resources Code section 5024.1, Title 14 CCR, section 4850 et seq.).
- B. A resource included in a local register of historical resources, as defined in section 5020.1(k) of the Public Resources Code, or identified as significant in a historical resource survey meeting the requirements of section 5024.1(g) of the Public Resources Code, shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- C. Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR (Public Resources Code section 5024.1, Title 14 CCR, section 4800.3) as follows:
  1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or
  2. Is associated with the lives of persons important in our past; or
  3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
  4. Has yielded, or may be likely to yield, information important in prehistory or history.

**California Register of Historical Resources (CRHR).** Under the CRHR (and almost identical to CEQA Guidelines Section 15064.5(a) criteria 3A through D, listed directly above), a historical resource may be determined significant under one or more of the following four criteria:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or
2. It is associated with the lives of persons important to local, California, or national history; or
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

**California Health and Safety Code Section 7050.5.** Health and Safety Code Section 7050.5 pertains to disturbance or willful removal of any human remains from a location other than a dedicated cemetery without proper authority. The statute specifies the steps required in the event of discovery or recognition of human, including stopping excavation until the county coroner determines that the remains are not subject to legal investigation of the death; and if determined not to be subject to the coroner's authority, and the coroner recognizes the remains to be of a Native American or has reason to believe they are Native American, then coroner shall contact the Native American Heritage Commission (NAHC) within 24 hours.

**Government Code Sections 65040.2, 65092, 65351, 65352, 65560, 65352.3, 65352.4, and 65562.5; Civil Code Section 815.3 (California Senate Bill 18; Chapter 905, "Traditional Tribal Cultural Places").** Senate Bill 18 (SB 18) requires cities and counties to conduct consultations with Native American tribes before local officials adopt or amend their general plans. These consultations are for preserving or mitigating impacts to Native American places, features, and objects described in Sections 5097.9 and 5097.993 of the Public Resources Code located within the city or county. A tribe has 90 days from the date of contact to request a consultation, unless the tribe agrees to a shorter timeframe. SB 18 also added a new topic that must be addressed in the general plan open space element: open space land for the protection of a Native American place, feature, or object described in Sections 5097.9 and 5097.993 of the Public Resources Code. See Section 8.3.1 for a discussion of the SB 18 notification process conducted by the County.

**Public Resources Code Sections 21073, 21074, 21080.3.1, 21083.09, 21084.2, and 21084.3 (California Assembly Bill 52; Chapter 532, relating to Native Americans).** Assembly Bill 52 (AB 52) establishes that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. AB 52 requires a lead agency to begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project, if (1) the tribe requested to the lead agency, in writing, to be informed by the lead agency of proposed projects in that geographic area, and (2) the tribe then timely requests formal consultation for that particular proposed project after receiving notification of the project. Consultation must be completed prior to releasing a negative declaration, mitigated negative declaration, or environmental impact report.

AB 52 requires the NAHC (see below) to provide each California Native American tribe with: (1) a list of all public agencies that may be a lead agency within the geographic area in which the tribe is traditionally and culturally affiliated, (2) the contact information of those agencies, and (3) information on how the tribe may request those public agencies to notify the tribe of projects for the purposes of requesting consultation. See Section 8.3.1 for a discussion of the AB 52 notification process conducted by the County.

**Native American Heritage Commission (NAHC).** The NAHC, established in 1976, was created to identify and catalog cultural resources (places of special religious or social significance to Native Americans, and known graves and cemeteries of Native Americans on private lands) in California. The NAHC is charged with the duty of preserving and ensuring accessibility of sacred sites and burials, the disposition of Native American human remains and burial items, maintaining an inventory of Native American sacred sites located on public lands, and reviewing current administrative and statutory protections related to these sacred sites. Among the functions of the NAHC is maintenance of lists of Native American Contacts and Most Likely Descendants. The NAHC authorizes Most Likely Descendants the right to determine the

treatment, disposition, and analysis of Native American remains. Also, see SB 18 and AB 52, above.

### 8.2.3 Local Regulations

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses cultural and historical resources issues. Applicable adopted CWP policies include:

#### **Built Environment Element – Planning Areas policies (these policies pertain specifically to the St. Vincent’s and Silveira Planning Area)**

- Policy SV-2.2: Require Master Plan. Require a master plan for new uses or a large reuse project based on an environmental review. Minor expansion of existing uses and minor compatible new uses may be allowed without a master plan, provided they do not increase the development intensity of either property. Any proposal for development in the St. Vincent’s and Silveira area should respect the land, honor the legacy of the human settlements from the Coast Miwok to the St. Vincent’s School for Boys to the Silveira family, limit the amount of traffic to and from the site, and be planned for long-term sustainability.
- Policy SV-2.3: Allow for a Mix of Uses. A variety of low-intensity and institutional uses may be appropriate for the St. Vincent’s and Silveira properties, depending on a comprehensive analysis of potential impacts and suitability. On the Silveira Ranch, retention and reuse of the ranch house is encouraged to recognize the building’s history. Examples of future uses could include a meeting center, museum, bed and breakfast, or similar use. The area around the house could be used for agriculture, a park or model farm, agricultural tourism and small-scale resort uses, or other low-impact educational or recreational purposes.
- Policy SV-3.4: Respect Historic Architecture. There should be a sense of arrival at a place with both a history and a valued natural environment. Design shall respect the historic architectural style.
- Policy SV-4.1: Preserve Historic Sites. Preserve historic structures, particularly the chapel and the H Complex on the St. Vincent’s property, and the school building, which is a California Historical Landmark. Other St. Vincent’s facilities should be retained as desired by the Catholic Youth Organization and integrated into future development plans.
- Policy SV-4.2: Preserve Archaeological Sites. Protect known archaeological resources on the Silveira property and ensure that any archaeological resources discovered during development review and construction will be protected.

#### **Built Environment Element – Planning Areas policies (these policies pertain specifically to the West Marin Planning Area)**

- Policy PA-7.7 Preserve Historic Structures. Historic structures should be preserved, and the long-established character of village centers should be enhanced. The overall physical character of present villages should be protected from damage or rapid change. Of particular importance are historic buildings or areas that meet one or more of the following criteria:
  - age

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- a fine example of a particular style
- a work of a notable architect or builder
- the site of a historic event
- a building associated with a famous person
- industries or activities that are part of the history of the area

**Socioeconomic Element – Historical and Archaeological Resources policies**

- Policy HAR-1.1: Preserve Historical and Archaeological Resources. Identify archaeological and historical resource sites.
- Policy HAR-1.2: Document Historical Information. Provide documents, photographs, and other historical information whenever possible to be catalogued in the Anne T. Kent California Room in the Marin County Free Library.
- Policy HAR-1.3: Avoid Impacts to Historical and Archaeological Resources. Ensure that human activity avoids damaging cultural resources, where feasible.
- Policy HAR-1.4: Participate in Historical Preservation Efforts. Work with federal, State, and local agencies, and interested individuals, groups, and educational organizations to obtain funding and employ other methods to preserve archaeological and historical sites.
- Policy HAR-1.5: Regulate Alteration of Historical Buildings. Limit the ability to modify historical structures, and require development to respect the heritage, context, design, and scale of older structures and neighborhoods.
- Policy HAR-2.1: Encourage Recognition of Significant Sites. Support efforts by community members, including owners of property with historical significance, to learn about and seek preservation and protection of these resources.

**Marin County Development Code (Title 22 of the Marin County Code).** Chapter 5.32 (Excavating Indian Middens) prohibits the disturbance or excavation of any Native American midden feature without a permit issued the Marin County Department of Public Works and specifies the procedures for seeking a permit and related conditions. Chapter 19.23 (Voluntary Alternative Regulations for the Designation, Construction, Alteration, Expansion or Preservation of Architecturally Significant Structures and Features) states the County's support for use of ingenuity in alternatives to Building Code specifications (Title 24, California Code of Regulations) to preserve architecturally significant features while ensuring health and safety are provided for by such alternatives. Section 22.20.040 E addresses requirements for outdoor construction activities that encounter archaeological or historic resources

**Marin County Local Coastal Program Land Use Plan.** The Marin County Local Coastal Program (LCP) Land Use Plan (2018) governs land development in the Marin County Coastal Zone and includes the following policies pertaining to cultural and historical resources in the coastal zone (i.e., Muir Beach, Stinson Beach, Bolinas, Olema, Point Reyes Station, Inverness, East Shore, Tomales, Dillon Beach):

- Policy C-HAR-1: Maintenance of Information on Archaeological and Paleontological Resources. Maintain a file on known and suspected archaeological and paleontological sites in the Coastal Zone, in cooperation with the area clearinghouse, for use in carrying out Policy C-HAR-2. Additional information on such sites that becomes available through the EIR process or by other means shall be added to the file and forwarded to the



CHRIS Northwest Information Center (NWIC). The file shall be kept confidential in order to prevent vandalism of sites.

- Policy C-HAR-2: Potential Impacts of Development on Archaeological and Paleontological Resources. Prior to the approval of a coastal project permit for any development proposed within an area of known or likely archaeological or paleontological significance, including sites identified in the file described in Policy C-HAR-1, require a field survey by a state-qualified archaeologist recommended by the Sacred Sites Protection Committee of FIGR or by a qualified paleontologist at the applicant's expense to determine the extent of archaeological or paleontological resources on the site. Where development would adversely impact identified resources, require mitigation measures, as appropriate, including avoidance and permanent protection as open space, if feasible, as recommended in the field survey.
- Policy C-HAR-3: Monitoring of Construction on Archaeological Sites by Appropriate Experts. As a condition of coastal permit approval, require that new development on sites identified as archaeologically sensitive include on-site monitoring by a qualified archaeologist(s) and appropriate Native American consultant(s) of all grading, excavation, and site preparation that involves earth moving. Provide for implementation of mitigation measures if significant resources are discovered by on-site monitors.
- Policy C-HAR-4: Structures of Special Character and Visitor Appeal. Preserve and restore structures with special character and visitor appeal in coastal communities.
- Policy C-HAR-5: Proposed Development that Affects Areas and Structures of Special Character and Visitor Appeal. Review all coastal permits for projects that (1) are located within the boundaries of those areas designated as having special character and visitor appeal, including historic areas, and (2) involve pre-1930 buildings, to ensure that such projects conform to:
  - "Design Guidelines for Construction in Areas of Special Character and Visitor Appeal and for pre-1930 Structures" and,
  - "Coastal Village Community Character Review Checklist", both located in the Appendix of the LCP.
- Policy C-HAR-6: Alterations and Additions to Structures of Special Character and Visitor Appeal. Require a coastal permit for substantial alterations or additions to any structure built prior to 1930 that would otherwise be exempt from a coastal permit, except for (a) maintenance or repair to any pre-1930 structure consistent with its original architectural character and (b) maintenance or repair that includes replacement-in-kind of building components. Alterations or additions to any pre-1930 structure shall retain the scale and original architectural character of the structure, especially for the front facade.
- Policy C-HAR-7: Proposed Demolition of Structures of Special Character and Visitor Appeal. Review the proposed demolition of any structure built prior to 1930 for its impacts on community character, except that demolition of any secondary or agricultural building built prior to 1930 may be exempted from this requirement upon a finding by the Planning Director or appropriate hearing body that such structure is not a significant resource. Issuance of a coastal permit for the demolition of any pre-1930 structure may provide for such demolition to be delayed for a period not to exceed six months. During this period, the property owner or local historic group or society may attempt to find a purchaser or alternate location for the structure. This six-month period may be waived by the Planning Director or appropriate hearing body upon a finding that the structure is not significant to community character or to visitor appeal or cannot be rehabilitated.

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- Policy C-HAR-8: Village Areas with Special Character and Visitor Appeal. Ensure that all new development conforms in siting, scale, design, materials, and texture with surrounding community character within areas having special character and visitor appeal including mapped historic areas in Stinson Beach, Bolinas, Tomales, Marshall, Point Reyes Station, Olema, and Inverness.

**Community and Area Plans.** There are 26 Community Plans that contain policies for land use and development related specifically to particular local areas within Marin County, such as the Black Point Community Plan, Bolinas Community Plan, Marin City Community Plan, and Santa Venetia Community Plan, among others. These policies have been designed to reflect the character of local communities for use in evaluating discretionary planning applications, including preservation of cultural and historical resources.

### 8.3 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to cultural, tribal cultural, and historical resources that could result from the Project and discusses Project policies and actions that would avoid or reduce those potential impacts.

#### 8.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to cultural, tribal cultural, and historical resources if it would:

- A. Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines section 15064.5;
- B. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines section 15064.5;
- C. Disturb any human remains, including those interred outside of formal cemeteries; or
- D. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
  - (1) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
  - (2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

#### 8.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

This Section contains the proposed new implementing programs from the Safety Element Update that would avoid or reduce significant cultural, tribal cultural, and historical resources

impacts. The Housing Element Update does not contain policies or implementing programs that directly address CEQA-defined cultural, tribal cultural, and historical resources impacts.

New Safety Element Update policy and program language is shown in underline while deleted language is shown with ~~strikethrough~~.

Program EHS-2.1.c Promote Awareness of Risks to Historic Resources. Educate community members about the climate risks to historic, cultural, and tribal cultural resources, and the need to safeguard these cultural resources in partnership with tribal nations and community-based organizations.

### 8.3.3 Impacts and Mitigation Measures

The Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Chapter 3, Project Description, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of “candidate housing sites,” which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts.

This cultural, tribal cultural, and historical resources evaluation applies to the Candidate Housing Sites and is provided at a programmatic level consistent with the level of detail of the proposed Project.

**Impact 8-1: Destruction/Degradation of Historical Resources.** *[Threshold of Significance (a)]* There may be one or more properties or features within the Planning Area, now or in the future, that meet the CEQA definition of a historical resource, including properties or features eligible for listing in a local, State, or Federal register of historic resources. Future development facilitated by the Project could cause substantial adverse changes in the significance of one or more such historical resources. Such adverse changes in the significance of a CEQA-defined historical resource would be a **significant impact**.

Data compiled in preparation of the proposed Candidate Housing Sites list indicate that many sites may include existing structures that are at least 50 years old. In addition, the identification of historical resources must account for change over time. Today’s newer buildings may be recognized as historic within the timeframe of the Housing and Safety Elements Update project implementation. Today’s older buildings may attain historical significance as more is revealed about their past. Currently non-historic buildings may be recognized as historical in the future if the people or events associated with those buildings become historically or culturally distinguished. All these possibilities are accounted for in CEQA Guidelines section 15064.5 (Determining the Significance of Impacts to Archaeological and Historical Resources) and need to be considered for the Project.

Consistent with the perspective described above, the California Office of Historic Preservation notes, “There is a common misconception that resources 50 years or older need to be evaluated, but anything younger cannot be considered significant....[T]he California Register

criteria (CCR section 4852) state that in order for a resource to achieve significance within the past 50 years, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource....Specifically, the California Register statute allows CEQA Lead Agencies [in the case of this EIR, the County of Marin] a fair amount of flexibility in justifying that a resource is significant, even if that resource is less than 50 years old."<sup>35</sup>

Existing CWP Policy HAR-1.1 – Preserve Historical and Archaeological Resources and Policy HAR-1.5 – Regulate Alteration of Historical Buildings provide for identification of historical resource sites and protection of historical structures. County Code Section 22.20.040 E addresses requirements for outdoor construction activities that encounter historical resources. These policies and code regulations would ensure Project impacts on known historical resources would be *less-than-significant*. However, due to the possibilities described above, a substantial adverse change to a historical resource due to an individual discretionary development proposal facilitated by the Project could occur unless, prior to construction activities, an evaluation by a qualified professional in accordance with CEQA Guidelines Section 15064.5 determines whether the project would have new or substantially more severe impacts to historical resources.

**Mitigation Measure 8-1.** For any project facilitated by the Housing and Safety Elements Update project that the County determines may involve a property that contains a potentially significant historical resource, then that resource shall be assessed by a professional who meets the Secretary of the Interior's Professional Qualifications Standards to determine whether the property is a significant historic resource and whether or not the project may have a potentially significant adverse effect on the historical resource. If, based on the recommendation of the qualified professional, the County determines that the project may have a potentially significant effect, the County shall require the applicant to implement the following mitigation measures:

(a) Adhere to at least one of the following Secretary of the Interior's Standards:<sup>36</sup>

- Secretary of Interior's *Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*; or
- Secretary of Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*.

**(continued)**

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<sup>35</sup>California Office of Historic Preservation, CEQA Case Studies, September 2015 (Volume VI).

<sup>36</sup>Under the CEQA Guidelines (section 15064.5[b][3]), a project's adverse impact on a historic resource generally can be mitigated to a less-than-significant level by following either of these standards.

The qualified professional shall make a recommendation to the County as to whether the project fully adheres to the Secretary of the Interior's Standards, and any specific modifications necessary to do so. The final determination as to a project's adherence to the Standards shall be made by the County body with final decision-making authority over the project. Such a determination of individual project adherence to the Secretary of the Interior's Standards will constitute mitigation of the project historic resource impacts to a ***less-than-significant level*** (CEQA Guidelines section 15064.5).

**Mitigation Measure 8-1 (continued):**

(b) If measure (a) is not feasible, the historical resource shall be moved to a new location compatible with the original character and use of the historical resource, and its historical features and compatibility in orientation, setting, and general environment shall be retained, such that a substantial adverse change in the significance of the historical resource is avoided.<sup>37</sup> Implementation of measure (b) would reduce the impact to a ***less-than-significant level***.

If neither measure (a) nor measure (b) is feasible, then the County shall, as applicable and to the extent feasible, implement the following measures in the following order:

(c) Document the historical resource before any changes that would cause a loss of integrity and loss of continued eligibility. The documentation shall adhere to the Secretary of the Interior's *Standards for Architectural and Engineering Documentation*. The level of documentation shall be proportionate with the level of significance of the resource. The documentation shall be made available for inclusion in the Historic American Building Survey (HABS) or the Historic American Engineering Record (HAER) Collections in the Library of Congress, the California Historical Resources Information System (CHRIS), and the Bancroft Library, as well as local libraries and historical societies.

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<sup>37</sup>One example of a substantial adverse change would be the loss of eligibility for listing on the CRHR. The State Historical Resources Code encourages the retention of historic resources on-site and discourages the non-historic grouping of historic buildings into parks or districts. However, it is recognized that moving a historic building, structure, or object is sometimes necessary to prevent its destruction. Therefore, a moved building, structure, or object that is otherwise eligible may be listed in the CRHR if it was moved to prevent its demolition at its former location and if the new location is compatible with the original character and use of the historic resource. A historic resource should retain its historic features and compatibility in orientation, setting, and general environment. (California Office of Historic Preservation, *California Register and National Register: A Comparison*, Technical Assistance Series 6; Sacramento, CA: California Department of Parks and Recreation, 2001)

**Mitigation Measure 8-1 (continued):**

(b) If measure (a) is not feasible, the historical resource shall be moved to a new location compatible with the original character and use of the historical resource, and its historical features and compatibility in orientation, setting, and general environment shall be retained, such that a substantial adverse change in the significance of the historical resource is avoided.<sup>38</sup> Implementation of measure (b) would reduce the impact to a ***less-than-significant level***.

If neither measure (a) nor measure (b) is feasible, then the County shall, as applicable and to the extent feasible, implement the following measures in the following order:

(c) Document the historical resource before any changes that would cause a loss of integrity and loss of continued eligibility. The documentation shall adhere to the Secretary of the Interior's *Standards for Architectural and Engineering Documentation*. The level of documentation shall be proportionate with the level of significance of the resource. The documentation shall be made available for inclusion in the Historic American Building Survey (HABS) or the Historic American Engineering Record (HAER) Collections in the Library of Congress, the California Historical Resources Information System (CHRIS), and the Bancroft Library, as well as local libraries and historical societies.

(d) Retain and reuse the historical resource to the maximum feasible extent and continue to apply the Secretary of the Interior's Standards to the maximum feasible extent in all alterations, additions, and new construction.

(e) Through careful methods of planned deconstruction to avoid damage and loss, salvage character-defining features and materials for educational and interpretive use on-site, or for reuse in new construction on the site in a way that commemorates their original use and significance.

**(continued)**

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<sup>38</sup>One example of a substantial adverse change would be the loss of eligibility for listing on the CRHR. The State Historical Resources Code encourages the retention of historic resources on-site and discourages the non-historic grouping of historic buildings into parks or districts. However, it is recognized that moving a historic building, structure, or object is sometimes necessary to prevent its destruction. Therefore, a moved building, structure, or object that is otherwise eligible may be listed in the CRHR if it was moved to prevent its demolition at its former location and if the new location is compatible with the original character and use of the historic resource. A historic resource should retain its historic features and compatibility in orientation, setting, and general environment. (California Office of Historic Preservation, *California Register and National Register: A Comparison*, Technical Assistance Series 6; Sacramento, CA: California Department of Parks and Recreation, 2001)

**Mitigation Measure 8-1 (continued):**

(f) Interpret the historical significance of the resource through a permanent exhibit or program in a publicly accessible location on the site or elsewhere within the Planning Area.

Implementation of measures (c), (d), (e), and/or (f) would reduce a significant impact on historic resources, but not to a less-than-significant level. Without knowing the characteristics of the potentially affected historical resource or of the future individual development proposal, the County cannot determine with certainty that measure (a) or (b) above would be considered feasible. Consequently, this impact is currently considered **significant and unavoidable**.

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**Impact 8-2: Potential for Disturbance of Archaeological Resources, Including Human Remains, and Tribal Cultural Resources.** [*Thresholds of Significance (b), (c), (d)(1), and (d)(2)*] Development facilitated by the Project could disturb unrecorded sensitive archaeological resources or tribal cultural resources in the Planning Area.

As discussed above in the Section 8.1, the county is known to contain many archaeological and tribal cultural resources. Development facilitated by the Project would include sites that are currently vacant and sites that currently contain structures, and there is a strong possibility that as-yet unrecorded prehistoric cultural resources or tribal cultural resources could exist beneath the surface of vacant sites or underutilized sites. Additionally, buried prehistoric cultural resources could exist at locations that were developed during time periods when prehistoric cultural resources may not have been noted or protected during construction. Contact with such resources during construction activities could result in a significant impact, and State Health and Safety Code Section 7050.5 would apply if human remains are found.

The County notified the Native American tribes traditionally and culturally affiliated with the County, including providing a description of the Project, the name of the program points of contact, and the time period for comments as provided for by State law.

AB 52 notification letters were sent by the County to three tribes on November 12, 2021: FIGR, the Coast Miwok Tribal Council of Marin, and the Lone Band of Miwok Indians. All three tribes have previously requested consultation notifications pursuant to AB 52.

FIGR submitted a response to the County on November 19, 2021, requesting consultation. No other tribes responded to the AB 52 notifications. After some scheduling coordination, County staff met with FIGR on March 29, 2022 via Zoom and, during that consultation meeting, FIGR requested that background cultural resource information (known as CHRIS reports) be compiled by the County on all the potential housing sites. FIGR also requested ongoing consultation on the EIR. The County shared its tribal cultural resources impact conclusions and proposed mitigation measures with FIGR. No response with feedback has been received to date (September 28, 2022).

Subsequently, the County requested from the NAHC a current list of tribes to be notified per SB 18 requirements. The current list of tribes was sent to the County by NAHC on March 30, 2022 and included FIGR, Guidiville Indian Rancheria, Muwekma Ohlone Indian Tribe of the SF Bay Area, and Wuksache Indian Tribe/Eshom Valley Band. SB 18 notices were sent to the tribes listed on the NAHC list on April 4, 2022. FIGR submitted a response on May 10, 2022 requesting consultation pursuant to SB 18. County staff held an SB 18 consultation meeting with FIGR on September 12, 2022. Consultation is ongoing and no formal suggestions for the EIR or the Housing or Safety Element policies have been forthcoming from FIGR as of yet. As of September 28, 2022, no response has been received from the other Tribes who were notified. The SB 18 notification/response period concluded on Tuesday, July 5, 2022.

Existing CWP Policy HAR-1.1 – Preserve Historical and Archaeological Resources and Policy HAR-1.3 – Avoid Impacts to Historical and Archaeological Resources provide for identification of historical resource sites and protection of historical structures. County Code Section 22.20.040 E addresses requirements for outdoor construction activities that encounter archaeological resources. In addition, Safety Element Update Program EHS-2.1.c Promote Awareness of Risks to Historic Resources would support the safeguarding of cultural resources. And in the event human remains are found during construction activities, compliance with in State Health and Safety Code section 7050.5 and CEQA Guidelines Section 15126.4(b) would be required.

Therefore, proposed new Program EHS-2.1.c and Project compliance with existing CWP policies, State laws, and County Code requirements would ensure that potential impacts on archaeological resources, including human remains, and on tribal cultural resources from future development facilitated by the Project would be ***less-than-significant***.

### **Cumulative Cultural, Tribal Cultural, and Historical Resource Impacts**

*Archaeological and Tribal Cultural Resources.* Future cumulative development outside of the Project planning area could result in impacts on archaeological and tribal cultural resources. This development would be subject to the same State regulations discussed above in Section 8.2, Regulatory Setting. For areas within the unincorporated county, Marin County Code regulations and standards would also apply. Individual project impacts with respect to archaeological and tribal cultural resources would be site-specific and would not be expected to combine with the impacts of other projects throughout the county, including the incorporated cities and towns. Compliance with State and local regulations would be anticipated to reduce impacts to a less-than-significant level; therefore, the Project would not contribute to a cumulative impact on archaeological and tribal cultural resources, and cumulative impacts would be ***less-than-significant***.

*Historical Resources.* Future cumulative development outside of the Project planning area could result in impacts on historical resources. This development would be subject to the same Federal and State regulations discussed above in Section 8.2, Regulatory Setting. For areas within the unincorporated county, Marin County Code regulations and standards would also apply; however, although Mitigation Measure 8-1 establishes performance standards for preserving historical resources, without knowing the characteristics of the potentially affected historical resource or of the future individual development proposal, the County cannot determine with certainty that this Mitigation Measure would be considered feasible and therefore cannot determine at this time that it would be sufficient. Consequently, this impact is currently considered significant and unavoidable. Therefore, if local historical resources are determined to exist on a future, specific development site and are demolished or altered in a manner that does



not comply with the Secretary of the Interior's Standards, the Project's contribution to cumulative historic resource impacts would be ***significant and unavoidable***.

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## 9. GEOLOGY AND SOILS

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Geology and Soils. Would the project:</b>				
a) <i>Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:</i>				
i) <i>Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42;</i>			X	
ii) <i>Strong seismic ground shaking;</i>			X	
iii) <i>Seismic-related ground failure, including liquefaction; or</i>			X	
iv) <i>Landslides?</i>			X	
b) <i>Result in substantial soil erosion or the loss of topsoil?</i>			X	
c) <i>Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?</i>			X	
d) <i>Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?</i>			X	
e) <i>Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?</i>			X	
f) <i>Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?</i>			X	

This EIR chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts.

<sup>1</sup>State CEQA Guidelines, Appendix G, item VII (a through f).

## 9.1 ENVIRONMENTAL SETTING

### 9.1.1 Geologic Setting

**A. Overview.** Marin County is approximately 606 square miles in area and located north of San Francisco, south of Sonoma County, and west of Contra Costa, with the Pacific Ocean to the west and San Francisco and San Pablo bays to the east. Marin County is in the central portion of the Coast Range geomorphic province, which extends along the western edge of California, bounded by the Transverse Ranges in the south, the Klamath Mountains in the north, and the Great Valley (e.g., the Central Valley) in the east. Much of the Coast Range Province is comprised of marine sedimentary deposits and volcanic rocks that form northwest trending mountain ridges and valleys with bedrock geology primarily of graywacke, shale, greenstone, basalt, chert, and sandstone. This geomorphic province is roughly parallel to the San Andreas Fault, which extends for more than 600 miles from Point Arena in Mendocino County to the Gulf of California.<sup>2</sup>

Thick Mesozoic and Cenozoic sedimentary strata comprise the Coast Range geomorphic province, with an underlying structure of Franciscan complex originated from oceanic crust of the Jurassic period (approximately 199.6 to 145.5 million years ago) with additional deposits overlain thereafter. This complex (also called “mélange” – French for “mixture” or “blend”) eventually slid or subducted beneath the Coast Range during Late Cretaceous time (approximately 99.6 to 65.5 million years ago) and presumably underlies the entire San Francisco Bay area east of the San Andreas Fault Zone.<sup>3</sup>

**B. Topography and Surface Features.** Marin County is predominantly hilly. The peak of Mt. Tamalpais is approximately 2,570 feet above mean sea level (MSL), with flatter interior valleys ranging from 10 to several hundred feet. Shoreline areas in the west range from beaches at sea-level to coastal bluffs of several hundred to 1,000 feet above MSL. In the east, flatter areas include shoreline areas and largely undeveloped historic Baylands near San Francisco and San Pablo bays, which comprise former or current wetland areas and tidal areas, plus fill along the developed parts of the shoreline.<sup>4</sup>

The surficial geologic makeup of Marin County includes interspersed areas of young alluvial fan deposits (less than 30,000 years) generally along or near creek and stream paths, lakes, and other water bodies such as reservoirs, with similarly young dune sands near Tomales Bay and beaches along the western coast. In the eastern part of the County, in the Novato area near San Francisco and San Pablo bays, there are also young alluvial fan deposits but also areas of Holocene San Francisco Bay mud (less than 11,800 years ago) that is presently, or was historically, tidal marsh, mud flat, or bay bottom. Some smaller areas in the east contain deposits of artificial fill over estuarine mud (less than 150 years). The majority of the remaining

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<sup>2</sup>Marin Countywide Plan, “Geology, Mineral Resources and Hazardous Materials Technical Background Report,” updated November 2005, p. 5; California Geological Survey, Note 36, “California Geomorphic Provinces,” Revised December 2002, p. 2.

<sup>3</sup>U.S. Geological Survey, Miscellaneous Field Studies MF-2337, “Geologic Map and Map Database of Parts of Marin, San Francisco, Alameda, Contra Costa, and Sonoma Counties, California,” M.C. Blake, R.W. Graymer, and D.L. Jones, 2000, pp. 1-3.

<sup>4</sup>Marin Countywide Plan, November 6, 2007, p. 3-4.2; County of Marin Community Development Agency, Marin Countywide Update Draft EIR, January 2007, p. 4-8.1; <https://www.marinmap.org/Html5Viewer/Index.html?viewer=smmdataviewer>, accessed 5/10/22.

County area is comprised of quaternary and older deposits and bedrock (over 1.4 million years ago) from Jurassic to Pliocene sedimentary, metamorphic, volcanic, and plutonic rocks, with some poorly consolidated Tertiary sediment. The underlying structure, as noted above, is the Franciscan Complex.<sup>5</sup>

The county contains many creeks and streams, including but not limited to: Arroyo Corte Madera del Presidio, Chileno Creek, Corte Madera Creek, Fairfax Creek, Gallinas Creek, Lagunitas Creek, Larkspur Creek, Miller Creek, Novato Creek, Ross Creek, Coyote Creek, San Anselmo Creek, San Antonio Creek, San Geronimo Creek, San Rafael Creek, Sleepy Hollow Creek, and Walker Creek. Two waterways define parts of the County's border with Sonoma County: Estero Americano Creek in the northwest and the Petaluma River in the northeast.

### 9.1.2 Fault Rupture

**A. Earthquake Risk.** The San Andreas Fault runs through the west part of the county from Bodega Bay through Tomales Bay and continuing southward to the Gulf of California, and this area has been designated an Alquist-Priolo Special Study Zone. There are no other Special Study Zones in Marin County; however, the Burdell Mountain Fault is in the eastern part of the county. Farther east under San Pablo Bay is the Hayward fault, which technically lies within the boundaries of Marin County.<sup>6</sup> Other active faults pass through parts of the San Francisco Bay area that can affect Marin County, including the Hayward, San Gregorio, and Rodgers Creek faults.<sup>7</sup> These and other faults present potential hazards due to seismic shaking. According to the U.S. Geological Survey, there is a 72 percent probability of at least one earthquake of magnitude 6.7 or greater striking somewhere in the San Francisco Bay region before 2043.<sup>8</sup>

**B. Surface Rupture.** Surface rupture occurs along active fault traces, or where compressed and distorted soils break open to relieve earthquake-induced stress. When this occurs on a fault, everything built across the trace or line of the fracture is generally destroyed, but if it occurs in the course of stress relief, the damage is usually less catastrophic.

The Public Draft Safety Element (June 2022) presents maps showing fault location throughout the county and seismic shaking amplification hazards.

### 9.1.3 Seismic Ground Shaking

Ground shaking is caused by the seismic waves that radiate out from an earthquake's epicenter. The severity of ground shaking at a particular location is primarily determined by

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<sup>5</sup>U.S. Geological Survey, Open-File Report 06-1037, "Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, California," R.C. Witter, K.L. Knudsen, J.M. Sowers, C.M. Wentworth, R.D. Koehler, C.E. Randolph, S.K. Brooks, and K.D. Gans, 2006; U.S. Geological Survey, Open-File Report 00-444, "Description of Mapping of Quaternary Deposits and Liquefaction Susceptibility, Nine-County San Francisco Bay Region, California," K.L. Knudsen, J.M. Sowers, R.C. Witter, C.M. Wentworth, and E.J. Helley, 2000.

<sup>6</sup>County of Marin Community Development Agency, Marin Countywide Update Draft EIR, January 2007, p. 3-0.17; <https://www.marinmap.org/Html5Viewer/Index.html?viewer=smmdataviewer>, accessed 5/10/22.

<sup>7</sup>ABAG, Geographic Information Systems, Alquist-Priolo Earthquake Fault Zones, Plate 1, 2004.

<sup>8</sup>U.S. Geological Survey, "Earthquake Outlook for the San Francisco Bay Region 2014–2043," Fact Sheet 2016-3020, Revised August 2016.

distance from the epicenter of the earthquake and by the local soil profile. The severity of an earthquake can be expressed in terms of both intensity and magnitude. However, the two terms are quite different, and they are often confused. Intensity is based on the observed effects of ground shaking on people, buildings, and natural features and varies from place to place within the disturbed region, depending on the observer's location in relation to the earthquake epicenter. Magnitude relates to the amount of seismic energy released by the earthquake at the hypocenter, which is the point within the earth where an earthquake rupture starts (the epicenter is the point directly above it at the surface of the Earth). Unconsolidated sedimentary deposits like bay muds and even sedimentary rocks or other soft materials can amplify the shaking. So locations over sedimentary basins or situated on unconsolidated sedimentary deposits can be particularly susceptible to strong shaking. In addition, faults can reflect seismic waves or focus waves at unexpected locations.<sup>9</sup>

The most commonly used intensity scale for measuring earthquakes is the Modified Mercalli Intensity (MMI) scale, which as shown in Table 9-1, describes the effects typically experienced during earthquakes. The lower numbers on the intensity scale deal with the manner in which an earthquake is felt by people, while higher numbers are based on observed structural damage. For intensity values of VIII or above, structural engineers usually contribute information.

#### 9.1.4 Seismic Related Ground Failure Hazards

Ground failure hazards that can result from an earthquake include landsliding, differential settlement, liquefaction, and lateral spreading. The Public Draft Safety Element (June 2022) presents maps for all the geologic hazards presented below.

**A. Landsliding.** Landsliding entails sudden slope failure. As indicated on the County GIS mapping system and other databases, large areas of steep slopes contribute to the vulnerability of earthquake-induced disasters by increasing probability of landslides.<sup>10</sup> These areas, some of which are in the northwest part of the County near the Marin-Sonoma County border but others in the central parts of the County, are dominated by mountainous terrain. In areas where slopes decrease, the probability for landslides also decreases, though that partly depends on the type of soil, underlying geological structure, and related environmental conditions (such as water saturation). Also, the valley areas such as along Nicasio Valley Road or Point Reyes-Petaluma Road are typically comprised of surficial deposits with gentle slopes or otherwise limited potential for slides based on the deposits.<sup>11</sup>

**B. Differential Settlement.** Differential settlement normally occurs within unconsolidated soils subjected to unequal surface loading. Movement of the ground causes an additional compaction of the soil that is proportional to the soil's pre-existing density and to the magnitude of imposed loads. These conditions often result in unequal settlement, which can cause the failure of poorly stabilized cut-and-fill embankments and of foundations that are not properly engineered to span areas of discontinuous support.

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<sup>9</sup>U.S. Geological Survey, Earthquake Hazards Program, <https://earthquake.usgs.gov/education/shakingsimulations/background.php>, accessed 5/12/22.

<sup>10</sup>Marin County Multi-Jurisdiction Local Hazard Mitigation Plan (MCM LHMP), 2018, p. 35.

<sup>11</sup>County of Marin, Marin GeoHub, <https://gisopendata.marincounty.org/datasets/MarinCounty::landslide/explore?location=38.083324%2C-122.516920%2C13.00>, accessed 5/10/22.

**Table 9-1:  
Modified Mercalli Intensity Scale and Moment Magnitude Scale**

<b>Magnitude</b>	<b>Shaking</b>	<b>Description/Damage</b>
I	Not Felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by few persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very Strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designed structures; considerably damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

SOURCE: U.S. Geological Survey, Earthquake Hazards, "The Modified Mercalli Intensity Scale," [https://www.usgs.gov/programs/earthquake-hazards/modified-mercalli-intensity-scale?qt-science\\_center\\_objects=0#qt-science\\_center\\_objects](https://www.usgs.gov/programs/earthquake-hazards/modified-mercalli-intensity-scale?qt-science_center_objects=0#qt-science_center_objects), accessed 5/4/22.

**C. Liquefaction.** Liquefaction is a loss of foundation support that occurs in saturated granular soils, most notably loose, uniformly graded, fine-grained sand. Under liquefaction, these materials can experience a temporary loss of strength due to build-up of excess pore water pressure, especially during cyclic loadings such as those induced by earthquakes. When this occurs, significant total and differential settlement of structures built on the surface can result. In addition, sea-level rise, which is predicted to lead to rising water tables, can result in an increased risk of soil liquefaction during earthquakes.<sup>12</sup> As indicated on the County GIS mapping system and other databases, there are several areas of very high liquefaction susceptibility located in the west (the coastal corridor), such as around Point Reyes Station and Olema, plus the beaches at Drake's Bay and around Stinson's Beach, and also in the east (the Baylands corridor and parts of the city-centered corridor), such as areas around Tiburon Boulevard near Richardson Bay, portions of Corte Madera and Larkspur, around Sir Francis Drake Boulevard near I-580 and the connector to U.S. 101.<sup>13</sup>

**D. Lateral Spreading.** Lateral spreading occurs when local ground shaking causes generally flat-lying alluvial deposits to be displaced horizontally toward an open cut or excavation (such as along the side of a drainage channel). As mentioned in subsection 9.1.1(b) above, there are many creeks and streams that flow through parts of the County.

### 9.1.5 Soils and Soil Stability

**A. Soils.** Predominant soils in the county, as identified by Natural Resources Conservation Service soil data, include a variety of soil units: in hilly areas, the Tocaloma-Saurin association, Tocaloma-McMullin complex, and Los Osos-Bonnydoon complex; in flatter inland valleys, Tomales loam and the Blucher-Cole series; in western coastal areas, a rugged landscape of rock outcrops (some with slopes up to 75 percent) with sandy beaches and dune land; and in eastern coastal areas, the shoreline is largely artificial fill over estuarine mud (engineered fill in the past several decades) and tidal wetlands. Other soils include the Ballard series, Clear Lake clay, Cortina gravelly sandy loam, Olompali loam, Novato clay, Rodeo clay loam, and Xerorthents complex (man-modified material often comprised of fills that may incorporate reworked soils from developed areas).<sup>14</sup>

**B. Subsidence.** Subsidence is the motion of the ground as it shifts downward, mainly from the removal of subsurface water. As explained in the January 2022 Vulnerability Assessment for the Marin Countywide Plan Safety Element Update (p. xiv): "Many shoreline properties in Marin County are built on fill and mud. As underlying soils become more saturated under sea level rise conditions, they consequently become more vulnerable to increasing rates of subsidence." In addition, the 2022 Vulnerability Assessment noted that utilities infrastructure "along the

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<sup>12</sup>U.S. Geological Survey, Liquefaction and Sea-Level Rise, "Sensitivity to liquefaction hazards from sea-level rise in the San Francisco Bay area, California," by T. Poitras, A. Grant, A. Wein, K. Knudsen, K. Befus, M. Erdman, and K. Petersen, <https://geonarrative.usgs.gov/liquefactionandsealevelrise/>, accessed 5/12/22.

<sup>13</sup>County of Marin, Marin GeoHub, <https://gisopendata.marincounty.org/datasets/MarinCounty::liquefaction/explore?filters=eyJMaXF1ZWZhY3Rpb24iOlsiVkgiXX0%3D&location=38.016826%2C-122.674500%2C11.06>, accessed 5/10/22; Marin County Housing & Safety Elements, "Map Atlas: Candidate Housing Sites and Existing Conditions and Constraints," <https://www.marincountyatlas.org/hazards>, accessed 5/11/22.

<sup>14</sup>U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>, accessed 5/8/22.



shoreline on fill and mud and in the bay itself” is already affected by subsidence, which is projected to increase in the future.<sup>15</sup>

**C. Expansive Soils.** Some of these soils exhibit expansive characteristics. The soils may pose risk from “shrink-swell potential” due to clay content that results in variations in moisture content and volume changes; when expansive soil dries, it shrinks, and when it becomes wet, it swells. Shrinking and swelling of expansive soils can result in damage to building foundations and to pavement without proper design.<sup>16</sup> These soils include: (1) Tomales loam, consisting of deep, moderately well-drained soils on coastal uplands that formed in material derived from soft sandstone; (2) the Blucher-Cole series, and more particularly Cole, consisting of very deep, somewhat poorly drained soils on alluvial fans and in basins that formed in alluvium derived from various kinds of rocks; (3) Clear Lake clay, consisting of very deep, poorly drained soils in basins that formed in fine textured mixed alluvium; (4) Olompali loam, consisting of deep, somewhat poorly drained soils on coastal terraces that formed in alluvium derived from various kinds of rock; (5) Novato clay, consisting of very deep, very poorly drained soils along the margins of bay in tidal marshes that formed in alluvium derived from various kinds of rock; and (6) Rodeo clay loam, consisting of very deep, poorly drained soils in narrow valleys and basins that formed in mixed alluvium derived from chert, sandstone, and granite.<sup>17</sup>

**D. Septic System Compatibility.** At some locations in the county, use of standard septic systems (e.g., tank and gravity drain field) is either limited or unsuitable due to soil or groundwater characteristics. Soil types with limited suitability for a standard septic system because of soil types with slow percolation rates include Los Osos series, Tomales loam, Blucher-Cole, and Cronkhite series. Other soil types have limitations due to slopes or depth to rocks, including Tocaloma Saurin, Tocaloma McMillin, Dipsea-Barnabe, Palomarin-Wittenberg, and Saurin-Bonnydoon. In some cases, an alternative system may be necessary. One type of alternative system is a mound system, where suitable soil is placed above grade to supplement the native soil. The distribution system is installed in the mound where, after being pumped from the septic tank, the effluent filters through the sand and disperses into the native soil. However, alternative systems have their own limitations and design requirements.<sup>18</sup>

### 9.1.6 Paleontological Resources

Paleontological resources include fossil remains, as well as fossil localities and rock or soil formations that have produced fossil material. Paleontological resources are often encountered as small outcroppings protruding from the ground surface or during grading activities when soils are disturbed. The underlying geologic formations in an area can give a strong indication of the type of paleontological resource most likely to be encountered because different types of geologic strata (sedimentary rock layers) are better able to preserve paleontological resources

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<sup>15</sup>January 2022 Vulnerability Assessment for the Marin Countywide Plan Safety Element Update, p. 69.

<sup>16</sup>U.S. Department of Agriculture, Natural Resources Conservation Service, “Understanding Soil Risks and Hazards,” 2004 (available at: [https://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/16/nrcs143\\_019268.pdf](https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/16/nrcs143_019268.pdf)).

<sup>17</sup>U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Marin County, March 1985.

<sup>18</sup>County of Marin, Community Development Agency, Environmental Health Services, “Septic Systems,” <https://www.marincounty.org/depts/cd/divisions/environmental-health-services/septic-systems>, accessed 5/11/22; U.S. Environmental Protection Agency, “Types of Septic Systems,” <https://www.epa.gov/septic/types-septic-systems#mound>, accessed 5/16/22.

than others. As discussed above in subsection 9.1.1, Marin County's surficial geologic units include young alluvial fan deposits less than 30,000 years old, with even younger areas of Holocene San Francisco Bay mud (less than 11,800 years old). And although the Holocene unit is typically not considered paleontologically sensitive because of the geological youth of the remains and, as a result, would be too young to be fossilized, these deposits may contain remains that are lifted from older deposits by the movement of the geologic units. The age of most layered (sedimentary) rocks can often be determined through study of the fossils these rocks contain; the great bulk of the fossil record is dominated by fossils of animals with shells and microscopic remains of plants and animals, which are widespread in sedimentary rocks.<sup>19</sup> In Marin County, there are documented finds of rocks containing both megafossils and microfossils (radiolaria and dinoflagellates) of Late Jurassic and Early Cretaceous age.<sup>20</sup>

### 9.1.7 Candidate Housing Sites

As discussed in Chapter 3, Project Description, the Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described below as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of "candidate housing sites," which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that "Project Sites" prove infeasible or undesirable due to potential environmental impacts.

These sites are generally located along the west side of the county (the Coastal Corridor) from Tomales south to Stinson Beach; along the east side from the Novato area south to Marin City (the Baylands and City-Centered Corridors); around Nicasio; in the Lucas Valley-Marino area; and in the Lagunitas-Forest Knolls/San Geronimo/Woodacre area (the Inland Rural Corridor). Many of the proposed sites are in already-developed areas identified as being able to accommodate additional housing construction. The locations of the candidate housing sites are on the same geologic structures as other parts of the county and include many of the soil types discussed above. This means that the sites are subject to the same potential for earthquake risk and earthquake hazards (e.g., surface rupture, ground shaking, landsliding, differential settlement, liquefaction, lateral spreading) as other similar areas in the county, and discussed in Section 9.3.3, Impacts and Mitigation Measures.<sup>21</sup>

## 9.2 REGULATORY SETTING

### 9.2.1 Federal Regulations and Laws

**National Earthquake Hazards Reduction Program.** Established by Congress in 1977, the National Earthquake Hazards Reduction Program (NEHRP) leads the federal government's

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<sup>19</sup>U.S. Geological Survey, "Fossils and Rocks," <https://pubs.usgs.gov/gip/fossils/fossils-rocks.html>, accessed 5/12/22.

<sup>20</sup>U.S. Geological Survey, Miscellaneous Field Studies MF-2337, "Geologic Map and Map Database of Parts of Marin, San Francisco, Alameda, Contra Costa, and Sonoma Counties, California," M.C. Blake, R.W. Graymer, and D.L. Jones, 2000, p. 7.

<sup>21</sup>Marin County Housing & Safety Elements, "Map Atlas: Candidate Housing Sites and Existing Conditions and Constraints," <https://www.marincountyatlas.org/hazards>, accessed 5/11/22.

efforts to reduce the fatalities, injuries, and property losses caused by earthquakes. The four basic NEHRP goals are:

- Develop effective practices and policies for earthquake loss reduction and accelerate their implementation.
- Improve techniques for reducing earthquake vulnerabilities of facilities and systems.
- Improve earthquake hazards identification and risk assessment methods, and their use.
- Improve the understanding of earthquakes and their effects.

In its initial NEHRP authorization, and in subsequent reauthorizations, Congress has recognized that several key federal agencies can contribute to earthquake mitigation efforts.

**Federal Disaster Mitigation Act of 2000.** The Disaster Mitigation Act of 2000 authorizes the Federal Emergency Management Agency (FEMA) to set mitigation planning requirements for state, local, and Indian Tribal governments as a condition of mitigation grant and disaster assistance, and requires close coordination of mitigation planning and implementation efforts between FEMA and jurisdictions.

**Code of Federal Regulations (CFR) Title 43 CFR 8365.1-5.** This regulation addresses the collection of invertebrate fossils and fossil plants, including the willful disturbance, removal, and destruction of scientific resources or natural objects.

## 9.2.2 State Regulations and Laws

**Alquist-Priolo Earthquake Fault Zoning Act.** The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the potential hazard of surface faults to structures for human occupancy. The main purpose of the Act is to prevent the construction of human-occupied buildings built above active faults. The Act only addresses the hazard of fault rupture and is not directed toward other earthquake hazards.

The Act requires the State Geologist to establish regulatory zones (known as Earthquake Fault Zones) around the surface traces of active faults and to issue maps to all affected cities, counties, and State agencies for their use in planning and controlling development. Local agencies must regulate most development projects within the zones, and generally there can be no construction for human occupancy within 50 feet of an active fault zone.

**Seismic Hazards Mapping Act.** The Seismic Hazards Mapping Act, which was passed by the California legislature in 1990, addresses earthquake hazards related to liquefaction and seismically induced landslides. Under this Act, seismic hazard zones are mapped by the State Geologist in order to assist local governments in land use planning. Section 2697(a) of the Act states that "cities and counties shall require, prior to the approval of a project located in a seismic hazard zone, a geotechnical report defining and delineating any seismic hazard." Two exceptions to this are allowed related to certain single-family residential dwellings, and alterations or additions to any structure within a seismic hazard zone that do not exceed 50 percent of the structure's value or 50 percent of the floor area of the existing structure (Section 2693).

**Natural Hazards Disclosure Act.** The Natural Hazards Disclosure Act requires that sellers of real property and their agents provide prospective buyers with a "Natural Hazard Disclosure Statement" when the property being sold lies within one or more State-mapped hazard areas.

**California Building Standards Code.** The California Building Standards Code (CBSC) is contained in the California Code of Regulations (CCR), Title 24, and includes requirements for residential construction (California Residential Code) and non-residential construction (California Building Code), plumbing and electrical standards (California Plumbing Code and California Electrical Code, respectively), and related regulations. The purpose of the CBSC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability, by controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of building and structures. The CBSC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including drainage and erosion control. The 2019 California Building Code is based on the 2018 International Building Code (IBC) published by the International Code Council.

**California Public Resources Code Section 5097.** Public Resources Code Section 5097 prohibits willfully damaging any historical, archaeological, or vertebrate paleontological site or feature on public lands.

### 9.2.3 Regional/Local Regulations

**Metropolitan Transportation Commission (MTC) Multi-Jurisdictional Hazard Mitigation Plan.** The MTC Multi-Jurisdictional Hazard Mitigation Plan involves eight partner transportation agencies throughout the nine-county Bay Area jurisdiction, addresses different hazards in the Bay Area, and what recovery might look like, serving as a starting place for dialogue on public policies that can limit the potential loss of life, property damage, and environmental harm from natural disasters. The plan, which has been approved by FEMA, fulfills the requirements of the Federal Disaster Mitigation Act of 2000. County emergency management agencies in the Bay Area (including Marin County's) participated in the plan update process.

**Marin County Multi-Jurisdictional Local Hazard Mitigation Plan.** The 2018 Marin County Multi-Jurisdictional Local Hazard Mitigation Plan (MCM LHMP) was prepared to assess risks posed by natural hazards and to develop a mitigation strategy for reducing the County's risks, in accordance with the requirements of the Federal Disaster Mitigation Act of 2000. The MCM LHMP includes actions related to property protection, public education and awareness, natural resource protection, emergency services, and other areas of concern that are or would be implemented before, during, or after a natural or man-made disaster to reduce the significance of impacts from earthquake, severe weather events, drought, landslide, and other emergency situations and/or disasters.

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses hazards due to earthquake activity and related geologic conditions. Applicable adopted Countywide Plan policies include:

#### **Natural Systems and Agriculture Element – Environmental Hazards policies**

- Policy EH-2.1: Avoid Hazard Areas. Require development to avoid or minimize potential hazards from earthquakes and unstable ground conditions.
- Policy EH-2.2: Comply with the Alquist-Priolo Act. Continue to implement and enforce the Alquist-Priolo Earthquake Fault Zoning Act.

- Policy EH-2.3: Ensure Seismic Safety of New Structures. Design and construct all new buildings to be earthquake resistant. The minimum level of design necessary would be in accordance with seismic provisions and criteria contained in the most recent version of the State and County Codes. Construction would require effective oversight and enforcement to ensure adherence to the earthquake design criteria.

**Marin County Code.** As stated in County Code chapter 19.04 (Building Regulations), the County has adopted the 2019 edition of the California Building Code, California Code of Regulations, Part 2 of Title 24, to address design and construction in seismically active areas as well as site soil conditions, including expansive soils conditions or other soil problems which, if not corrected, could lead to structural defects (e.g., soil corrosivity), are considered in the planning process. Compliance with the California Building Code is enforced by the County's Building and Safety Division. The following County Code provisions are also relevant: Section 22.16.030(J)(6) addresses proposals for development in an Alquist-Priolo Fault Zone; Chapter 23.08 addresses grading permit requirements; Chapter 18.06 and Chapter 18.07 address individual sewage disposal systems and alternative sewage disposal systems; and Section 22.20.040 E addresses requirements for outdoor construction activities that encounter paleontological resources.

**Marin Operational Area Emergency Operations Plan.** In 2014, the Marin County Sheriff's Office of Emergency Services prepared the Marin Operational Area (OA) Emergency Operations Plan (EOP) to address the planned response to extraordinary emergency situations associated with large-scale disasters affecting Marin County. The EOP also addresses integration and coordination with other governmental agencies when required. The EOP provides the overall concept, organizational framework, and policies for responding to a major emergency or disaster within the Operational Area. In addition, the EOP establishes policies and procedures, and assigns responsibilities, to ensure the effective management of emergency operations within the Marin OA, including how and when the EOC staff is activated.

### 9.3 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to geology (including seismicity) and soils that could result from the Project, and discusses Project policies and actions that would avoid or reduce those potential impacts.

#### 9.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to geology and soils if it would:

- A. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42);
  2. Strong seismic ground shaking;

3. Seismic-related ground failure, including liquefaction; or
  4. Landslides;
- B. Result in substantial soil erosion or the loss of topsoil;
- C. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landsliding, lateral spreading, subsidence, liquefaction, or collapse;
- D. Be located on expansive soil, as defined by Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property;
- E. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater;
- F. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

### 9.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

This Section contains the proposed revised and new policies and implementing programs from the Safety Element Update that would avoid or reduce significant geology and soils impacts. The Housing Element Update does not contain policies or implementing programs that specifically address these impacts.

New Safety Element Update policy and program language is shown in underline while deleted language is shown with ~~strikethrough~~.

Policy EHS 2.1 Enhance Public Awareness. Make hazard studies, data, maps, services, and related information more accessible to residents and include more robust and targeted outreach in vulnerable communities.

Policy EHS 2.2 Improve Information Base. Support scientific studies and other technical planning efforts that increase and refine the body of knowledge regarding hazardous conditions in Marin County.

Policy ~~EH-23.1~~ Avoid Geologic Hazards Areas. Require development to avoid or minimize potential geologic hazards from earthquakes and unstable ground conditions.

Policy ~~EH-23.3~~ Ensure Seismic Safety of New and Existing Structures. Design and construct all new buildings and substantial remodeling projects to be earthquake resistant. The minimum level of design necessary would be in accordance with seismic provisions and criteria contained in the most recent version of the State and County Codes. Construction would require effective oversight and enforcement to ensure adherence to the earthquake design criteria.

Program ~~EHS-2.1.a~~ Distribute Maps. ~~Prepare~~ Update regularly and make available to the public maps depicting evacuation routes and areas prone to environmental hazards.

Program EHS-23.1.a Map Geologic Hazard Areas. Update Geologic Hazard Area maps as updated information becomes available. These maps should be used to determine the need for geologic and geotechnical reports for proposed development or redevelopment.

Program EHS-23.1.b Require Geotechnical Reports. Continue to require any applicant for land division, master plan, development approval, grading, or new construction in a geologic hazard area to submit a geotechnical report prepared by a State-certified Engineering Geologist or a Registered Geotechnical Engineer that: evaluates soil, slope, and other geologic hazard conditions; commits to appropriate and comprehensive mitigation measures sufficient to reduce risks to acceptable levels, including post-construction site monitoring, if applicable; addresses the impact of the project on adjacent lands, and potential impacts of offsite conditions; and meets the requirements of other agency regulations with jurisdiction in the hazard area, such as BCDC requirements for the safety of fills consistent with the Bay Plan.

Program EHS-23.2.a Prohibit Structures in Active Fault Traces. Prohibit placement of specified types of structures intended for human occupancy within 50 feet of an active fault trace in compliance with the Alquist-Priolo Earthquake Fault Zoning Act.

Program EHS-23.2.b Limit Building Sites in Alquist-Priolo Zones. Prohibit new building sites in any Alquist-Priolo Earthquake Fault Zone, unless a geotechnical report prepared by a professional geologist establishes that the development will comply with all applicable State and County earthquake standards and regulations.

Program EHS-23.3.a Avoid Known Landslides Areas. Continue to prohibit development in landslide areas and on landslide-prone deposits on steep slopes, except where the required geotechnical report indicates that appropriate mitigation measures can stabilize the site for construction.

Program EHS-23.3.b Protect Development from Increased Geologic Hazards. Plan for and protect development from increased risk of landslide, debris flows, post-fire debris flows, and subsidence resulting from climate change impacts by implementing Stability Report requirements and subsidence evaluation guidelines.

Program EHS-23.3.c Improve Soils Information. Compile and make available drilling log data from geotechnical reports that helps define the hazard potential due to specific soil conditions, such as areas with expansive soils, artificial fill, or bay mud.

Program EHS-23.3.e Identify Compressible Soil Potential. Require that geotechnical reports for projects on land underlain by compressible materials (such as fill, bay mud, and marsh or slough areas) delineate locations where settlement will be greatest and subsidence may occur, and recommend site preparation and construction techniques necessary to reduce risk and public liability to an acceptable level.

Program EHS-23.3.f Require Construction Observation and Certification. Require any work or construction undertaken to correct slope instability or mitigate other geologic hazard conditions to be supervised and certified by a geotechnical engineer and/or an engineering geologist.

Program EHS-23.3.g Reliability of Lifelines and Access (Evacuation) Routes. In cooperation with utility system providers, emergency management agencies, and others, assist in the

development of strategies to reduce adverse effects of geologic hazards, especially fault surface rupture and landslides to critical public lifelines, and access (i.e., evacuation) routes in an emergency.

Program EHS-23.3.h Retrofit County Buildings and Critical Facilities. Identify and remedy any County-owned structures and critical facilities in need of seismic retrofit or other geotechnical/structural improvement, including eliminating any potentially hazardous features, and/or relocating services if necessary.

Program EHS-6.1.f Disclose Current and Future Hazards. Develop a resale inspection permit program that provides disclosure of hazard risk information to prospective buyers prior to the sale of property. The program should include detailed hazard information, such as very high and high hazard wildfire severity zones, flood zones, tsunami and future sea level rise inundation areas, and Alquist-Priolo zones.

### 9.3.3 Impacts and Mitigation Measures

The Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Chapter 3, Project Description, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of “candidate housing sites,” which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts.

The geology and soils evaluation applies to the Candidate Housing Sites and is provided at a programmatic level consistent with the level of detail of the proposed Project.

**Impact 9-1: Effects of Rupture of a Known Earthquake Fault.** [Threshold of Significance (a)(i)] Part of the western County includes a known earthquake fault (e.g., San Andreas Fault) that is delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area. The Alquist-Priolo statute was enacted to reduce the threat to public health and safety; minimize the loss of life and property posed by earthquake-triggered ground failures and other hazards; and help agencies identify where higher building standards may be necessary for safe development. Statutes require that cities and counties use these zones as part of their construction permitting process. Development facilitated by the Housing Element Update and the Safety Element Update in known earthquake areas could be at risk from earthquake fault rupture; however, County Code Section 22.16.030(J)(6) related to Geologic hazards addresses development proposed in an Alquist-Priolo Fault Zone: “Construction shall not be permitted on identified seismic or geologic hazard areas such as on slides, on natural springs, on identified fault zones, or on bay mud without approval from the Department of Public Works, based on acceptable soils and geologic reports.”

In addition, the Safety Element Update proposes policies and implementing programs designed to reduce risk due to earthquake fault rupture. These proposed programs are listed below, and their full text is included in subsection 9.3.2 (Proposed Policies and Actions to Avoid or Reduce Significant Impacts), above.

- Policy EHS 2.1 Enhance Public Awareness
- Policy EHS 2.2 Improve Information Base



- Policy EH-23.1 Avoid Geologic Hazards Areas
- Policy EH-23.2 Comply with the Alquist-Priolo Act
- Policy EH-23.3 Ensure Seismic Safety of New and Existing Structures
- Program EHS-2.1.a Distribute Maps
- Program EHS-23.1.a Map Geologic Hazard Areas
- Program EHS-23.1.b Require Geotechnical Reports
- Program EHS-23.2.a Prohibit Structures in Active Fault Traces
- Program EHS-23.2.b Limit Building Sites in Alquist-Priolo Zones
- Program EHS-23.3.f Require Construction Observation and Certification
- Program EHS-6.1.f Disclose Current and Future Hazards

These proposed policies and implementing programs, and Project compliance with the County's seismic building standards for development within an Alquist-Priolo Zone would ensure that impacts related to the risk of property loss or hazards to occupants involving future development facilitated by the Project would be ***less-than-significant***.

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**Impact 9-2: Effects of Strong Seismic Ground Shaking.** [Threshold of Significance (a)(ii)] Development facilitated by the Housing Element Update and the Safety Element Update could experience strong seismic ground shaking and related effects in the event of an earthquake on the regional fault system, although neither element would exacerbate the existing risk of strong seismic ground shaking. Mandated project compliance with the stringent seismic design provisions of the latest California Building Standards Code (CBSC), as adopted by the County, would reduce these effects. In addition, the Safety Element Update proposes policies and implementing programs designed to reduce risk of property loss or hazards to occupants due to strong seismic ground shaking. These proposed programs are listed below, and their full text is included in subsection 9.3.2 (Proposed Policies and Actions to Avoid or Reduce Significant Impacts), above.

- Policy EHS 2.1 Enhance Public Awareness
- Policy EHS 2.2 Improve Information Base
- Policy EH-23.1 Avoid Geologic Hazards Areas
- Policy EH-23.2 Comply with the Alquist-Priolo Act
- Policy EH-23.3 Ensure Seismic Safety of New and Existing Structures
- Program EHS-2.1.a Distribute Maps
- Program EHS-23.1.a Map Geologic Hazard Areas
- Program EHS-23.1.b Require Geotechnical Reports
- Program EHS-23.2.a Prohibit Structures in Active Fault Traces
- Program EHS-23.3.a Avoid Known Landslides Areas
- Program EH-23.3.b Protect Development from Increased Geologic Hazards

- Program EHS-4e3.3.c Improve Soils Information
- Program EHS-23.3.e Identify Compressible Soil Potential
- Program EHS-23.3.f Require Construction Observation and Certification
- Program EHS-23.3.g Reliability of Lifelines and Access (Evacuation) Routes
- Program EHS-23.3.h Retrofit County Buildings and Critical Facilities
- Program EHS-6.1.f Disclose Current and Future Hazards

These proposed policies and implementing programs, and project compliance with the most recent California Building Standards Code (CBSC), as adopted by the County, would ensure that impacts related to the risk of property loss or hazards to occupants involving future development facilitated by the Project would be ***less-than-significant***.

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**Impact 9-3: Potential Soil Erosion and Loss of Topsoil.** [Threshold of Significance (b)] Development facilitated by the Housing Element Update and the Safety Element Update would include grading and construction activities that could result in minor erosion or the minor loss of some topsoil. To obtain a grading permit, the County requires a soils investigation report, which must include data regarding the nature, distribution and strength of existing soils, conclusions and recommendations for grading procedures and design criteria; a geological report, which must include an adequate description of the geology of the site and conclusions and recommendations regarding the effect of geologic conditions on the proposed work and adjacent areas; and an erosion and sedimentation control plan (ESCP), which must include all temporary and permanent devices necessary to avoid drainage and erosion related problems both during and after construction. In addition, project applicants are required to follow the most recent version of the Marin County Stormwater Pollution Prevention Program (MCSTOPPP) Construction Erosion and Sediment Control Plan Applicant Package when preparing the ESCP. (Chapter 12, Hydrology and Water Quality, provides a detailed discussion of erosion and sediment control requirements.)

In addition, the Safety Element Update proposes implementing programs designed to reduce soil erosion and loss of topsoil. These proposed programs are listed below, and their full text is included in subsection 9.3.2 (Proposed Policies and Actions to Avoid or Reduce Significant Impacts), above.

- Program EHS-23.1.b Require Geotechnical Reports
- Program EHS-4e3.3.c Improve Soils Information
- Program EHS-23.3.f Require Construction Observation and Certification

These proposed implementing programs, and Project compliance with County grading and erosion control requirements would ensure that impacts related to soil erosion and loss of topsoil would be ***less-than-significant***.

**Impact 9-4: Potential Ground Instability Impacts.** [Thresholds of Significance (a)(iii), (a)(iv), (c), (d)] The potential for ground instability can depend on specific, highly localized underlying soil conditions. Development facilitated by the Housing Element Update and the Safety Element Update in locations with potential risk of differential settlement, liquefaction, lateral spreading, landslides, and subsidence, if not properly engineered, could result in associated significant damage to project buildings, other improvements, and adjacent property, with direct or indirect risks to life or property.

Projects requiring a grading permit would be required to comply with County Code Chapter 23.08 – Excavating, Grading and Filling, including submittal of a soils investigation report, a geological report, and other information and/or plans as necessary and requested by the Public Works Director. These reports would be required to provide adequate descriptions of the geology of the site; conclusions regarding the effect of geologic conditions on the proposed work and adjacent areas; and recommendations for design and engineering refinements necessary to reduce the degree of impacts to less-than-significant levels, which the County would require to be incorporated into the project.

In addition, the Safety Element Update proposes policies and implementing programs designed to reduce risk due to ground instability. These proposed programs are listed below, and their full text is included in subsection 9.3.2 (Proposed Policies and Actions to Avoid or Reduce Significant Impacts), above.

- Policy EHS 2.1 Enhance Public Awareness
- Policy EHS 2.2 Improve Information Base
- Policy EH-23.1 Avoid Geologic Hazards Areas
- Policy EH-23.3 Ensure Seismic Safety of New and Existing Structures
- Program EHS-2.1.a Distribute Maps
- Program EHS-23.1.a Map Geologic Hazard Areas
- Program EHS-23.1.b Require Geotechnical Reports
- Program EHS-23.2.a Prohibit Structures in Active Fault Traces
- Program EHS-23.3.a Avoid Known Landslides Areas
- Program EH-23.3.b Protect Development from Increased Geologic Hazards
- Program EHS-23.3.c Improve Soils Information
- Program EHS-23.3.e Identify Compressible Soil Potential
- Program EHS-23.3.f Require Construction Observation and Certification
- Program EHS-23.3.h Retrofit County Buildings and Critical Facilities
- Program EHS-6.1.f Disclose Current and Future Hazards

These proposed policies and implementing programs, and Project compliance with County grading and building requirements, would ensure that impacts related to ground instability involving future development facilitated by the Project would be ***less-than-significant***.

**Impact 9-5: Potential Impacts Related to Soil Incompatibility for Use of Septic Tank or Alternative Wastewater Disposal Systems.** [Threshold of Significance (e)] Parts of the County have no sanitary sewer service and need to rely on septic systems; however, in some areas, soils are unsuitable for standard septic systems. In areas without sanitary sewer service, potential housing facilitated by the Housing Element Update could exacerbate impacts on septic systems if more septic systems are located on unsuitable soils due to the increased wastewater disposal for multi-family housing. Therefore, in areas without available sewer service an alternative wastewater treatment system may be necessary to meet the wastewater needs for development where soils are incapable of, or unsuitable for, supporting a traditional septic system. As provided in County Code Chapter 18.06 – Individual Sewage Disposal Systems, County Code Chapter 18.07 – Alternative Sewage Disposal Systems, and the “Regulations for Design, Construction and Repair of Individual Sewage Disposal Systems Pursuant to Marin County Code Chapter 18.06, Adopted: May 6, 2008, Corrected: Jan. 13, 2016,” the County has established regulations and procedures for site review, construction, and operation of off-site wastewater treatment systems, including traditional septic and alternative systems, and provides assistance through the Environmental Health Services division. Project compliance with these established procedures regulating alternative wastewater disposal systems would ensure that impacts related to soil incompatibility for use of septic tank or alternative wastewater disposal systems to allow for future development facilitated by the Project would be **less-than-significant**. Activities facilitated by the Safety Element Update would not have a septic impact.

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**Impact 9-6: Potential for Disturbance of Paleontological Resources.** [Threshold of Significance (f)] Development facilitated by the Housing Element Update and the Safety Element Update could result in disturbance of unrecorded paleontological resources.

As discussed above in subsection 9.1.1, Geologic Setting, Marin County’s surficial geologic units include alluvial and Bay mud deposits, Marin County’s surficial geologic units include young alluvial fan deposits (less than 30,000 years old) and even younger areas of Holocene San Francisco Bay mud (less than 11,800 years ago), with the underlying Franciscan Complex that may potentially contain paleontological resources. Further, as discussed in subsection 9.1.6, Paleontological Resources, although there are documented finds of rocks containing both megafossils and microfossils of Late Jurassic and Early Cretaceous age, the Holocene unit is not typically considered paleontologically sensitive because of the geological youth of the remains and, as a result, would be too young to be fossilized. Although it is possible that additional paleontological resources could be discovered during ground-disturbing activities, and contact with such fossil resources during ground-disturbing activities could result in significant impacts, the measures required by County Code Section 22.20.040 E regarding outdoor construction activities – “Archaeological, Historical, and Paleontological Resources” – would ensure that if paleontological resources are discovered during construction, construction activities shall cease and the Agency shall be notified so that a qualified professional could record the extent and location of discovered materials and coordinate the disposition of artifacts in compliance with State and Federal law. Therefore, Project compliance with this County Code requirement would ensure that any potential impacts on paleontological resources from future development facilitated by the Project would be **less-than-significant**.

### **Cumulative Geology and Soils/Paleontological Resources Impacts**

Future cumulative development outside of the Project planning area could result in risk of property loss or hazards to occupants due to strong seismic ground shaking and ground

instability, and there could also be adverse effects related to soil erosion and loss of topsoil. This development would be subject to the same State and/or regional regulations and standards (California Building Standards Code, Marin County Stormwater Pollution Prevention Program, construction erosion and sediment control) discussed above in Section 9.2, Regulatory Setting, and described in Impact 9-1, Impact 9-2, Impact 9-3, and Impact 9-4. For areas within the unincorporated county, Marin County Code regulations and standards would also apply. Although it might be possible for two adjacent improperly constructed projects to cumulatively affect a third facility (e.g., an underground utility line), an individual project's impacts with respect to geology and soils would be site-specific and would not combine with the equally site-specific geology or soils impacts of other projects throughout the county, including the incorporated cities and towns.

With respect to soil incompatibility and septic tanks or alternative wastewater disposal systems, although the Project, in combination with other future cumulative development, could increase potential impacts due to increased wastewater disposal if more septic systems are located on unsuitable soils, development projects outside of the Project planning area would be required to comply with the same Federal and State regulations as described in Section 12-2, Regulatory Setting, of Chapter 12, Hydrology and Water Quality, regarding wastewater discharge and onsite wastewater treatment systems. For areas within the unincorporated county, Marin County Code regulations described in Impact 9-5 would also apply.

With respect to paleontological resources, although the Project, in combination with other future cumulative development, could increase potential paleontological resource impacts, development projects outside of the Project planning area would be required to comply with the same Federal and State regulations as described in Section 9-2 regarding paleontological resources. For areas within the unincorporated county, Marin County Code regulations described in Impact 9-6 would also apply.

Therefore, future potential development facilitated by the Project would not make a cumulatively considerable contribution to any significant cumulative impact with respect to geology and soils or paleontological resources, and this impact would be ***less-than-significant***.

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## 10. GREENHOUSE GAS EMISSIONS AND ENERGY

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Greenhouse Gas Emissions and Energy. <i>Would the project:</i></b>				
a) <i>Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?</i>	X			
b) <i>Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?</i>	X			
c) <i>Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?</i>			X	
d) <i>Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?</i>			X	

This chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project,<sup>2</sup> and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts. The chapter was prepared using methodologies and assumptions recommended by the Bay Area Air Quality Management District (BAAQMD), the regional air quality regulatory agency.

<sup>1</sup>CEQA Guidelines, Appendix G, items VIII(a) and (b) and VI(a) and (b).

<sup>2</sup>The greenhouse gas (GHG) and energy analyses contained in Section 10.3 are based on the construction and operation of 10,993 dwelling units (candidate housing sites), which are more than the 5,214 dwelling units that would be facilitated by adoption of the Housing Element Update (project sites inventory), and the 3,569 dwelling units that are required by the Regional Housing Needs Allocation (RHNA). The air quality analysis' assumptions, which provide a conservative assessment of potential impacts, are consistent with the land use and transportation modeling assumptions used in the Air Quality Chapter (Chapter 6), Noise Chapter (Chapter 15), and Transportation Chapter (Chapter 18).

## **10.1 ENVIRONMENTAL SETTING**

### **10.1.1 Climate Change**

Climate change is the distinct change in measures of climate for a long period of time. Climate change can result from natural processes and from human activities. Natural changes in the climate can be caused by indirect processes such as changes in the Earth's orbit around the Sun or direct changes within the climate system itself (i.e., changes in ocean circulation). Human activities can affect the atmosphere through emissions of gases and changes to the planet's surface. Emissions affect the atmosphere directly by changing its chemical composition, while changes to the land surface indirectly affect the atmosphere by changing the way the Earth absorbs gases from the atmosphere. The term "climate change" is preferred over the term "global warming" because "climate change" conveys the fact that other changes can occur beyond just average increase in temperatures near the Earth's surface. Elements that indicate that climate change is occurring on Earth include:

- Rising of global surface temperatures by 1.3° Fahrenheit (°F) over the last 100 years
- Changes in precipitation patterns
- Melting ice in the Arctic
- Melting glaciers throughout the world
- Rising ocean temperatures
- Acidification of oceans
- Range shifts in plant and animal species

Climate change is intimately tied to the Earth's greenhouse effect. The greenhouse effect is a natural occurrence that helps regulate the temperature of the planet, and without it, life as we know it on Earth would not exist. Human activities since the beginning of the industrial revolution (approximately 150 years) have been adding to the natural greenhouse effect by increasing the gases in the atmosphere that "trap" energy, thereby contributing to an average increase in the Earth's temperature. Human activities that enhance the greenhouse effect are detailed below.

### **10.1.2 Greenhouse Gases**

Gases that "trap" heat in the atmosphere and affect regulation of the Earth's temperature are known as "greenhouse gases". Many chemical compounds in the Earth's atmosphere exhibit the GHG property. GHG allow sunlight to enter the atmosphere freely. When the sunlight strikes the Earth's surface, it is either absorbed or reflected back toward space. Earth, or materials near the Earth's surface, that have absorbed energy from sunlight warm up during the daytime and emit infrared radiation back toward space during both the daytime and nighttime hours. GHG absorb this long-wave, infrared radiation and help keep the energy in the Earth's atmosphere.

GHG that contribute to climate regulation are a different type of pollutant than criteria or hazardous air pollutants because climate regulation is global in scale, both in terms of causes and effects. Some GHG are emitted to the atmosphere naturally by biological and geological



processes such as evaporation (water vapor), aerobic respiration (carbon dioxide, or CO<sub>2</sub>), and off-gassing from low-oxygen environments such as swamps or exposed permafrost (methane or CH<sub>4</sub>). However, GHG emissions from human activities such as fuel combustion (e.g., CO<sub>2</sub>) and refrigerants use (e.g., hydrofluorocarbons, or HFCs) significantly contribute to overall GHG concentrations in the atmosphere, climate regulation, and global climate change. Human production of GHG has increased steadily since pre-industrial times (approximately pre-1880), and atmospheric CO<sub>2</sub> concentrations have increased from a pre-industrial value of 280 parts per million (ppm) in the early 1800s to approximately 419 ppm in March 2022 (NOAA, 2022). The effects of increased GHG concentrations in the atmosphere include increasing shifts in temperature and precipitation patterns and amounts, reduced ice and snow cover, sea level rise, and acidification of oceans. These effects in turn will impact food and water supplies, infrastructure, ecosystems, and overall public health and welfare.

The 1997 United Nations' Kyoto Protocol international treaty set targets for reductions in emissions of four specific GHG—CO<sub>2</sub>, CH<sub>4</sub>, nitrous oxide (N<sub>2</sub>O), and sulfur hexafluoride (SF<sub>6</sub>)—and two groups of gases—HFCs and perfluorocarbons (PFCs). These GHG are the primary GHG emitted into the atmosphere by human activities. Water vapor is also a common GHG that regulates the Earth's temperature; however, the amount of water vapor in the atmosphere can change substantially from day to day, whereas other GHG emissions remain in the atmosphere for longer periods of time. Black carbon consists of particles emitted during combustion; although a particle and not a gas, black carbon also acts to trap heat in the Earth's atmosphere. The most common GHG are described below.

- **Carbon Dioxide (CO<sub>2</sub>)** is emitted and removed from the atmosphere naturally. Animal and plant respiration involves the release of CO<sub>2</sub> from animals and its absorption by plants in a continuous cycle. The ocean-atmosphere exchange results in the absorption and release of CO<sub>2</sub> at the sea surface. CO<sub>2</sub> is also released from plants during wildfires. Volcanic eruptions release a small amount of CO<sub>2</sub> from the Earth's crust. Human activities that affect CO<sub>2</sub> in the atmosphere include burning of fossil fuels, industrial processes, and product uses. Combustion of fossil fuels used for electricity generation and transportation are the largest source of CO<sub>2</sub> emissions in the United States. When fossil fuels are burned, the carbon stored in them is released into the atmosphere entirely as CO<sub>2</sub>. Emissions from industrial activities also emit CO<sub>2</sub> such as cement, metal, and chemical production and use of petroleum produced in plastics, solvents, and lubricants.
- **Methane (CH<sub>4</sub>)** is emitted from human activities and natural sources. Natural sources of CH<sub>4</sub> include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, soils, and wildfires. Human activities that cause CH<sub>4</sub> releases include fossil fuel production, animal digestive processes from farms, manure management, and waste management. It is estimated that 50% of global CH<sub>4</sub> emissions are human generated. Releases from animal digestive processes at agricultural operations are the primary source of human-related CH<sub>4</sub> emissions. CH<sub>4</sub> is produced from landfills as solid waste decomposes. CH<sub>4</sub> is a primary component of natural gas and is emitted during its production, processing, storage, transmission, distribution, and use. Decomposition of organic material in manure stocks or in liquid manure management systems also releases CH<sub>4</sub>. Wetlands are the primary natural producers of CH<sub>4</sub> because the habitat is conducive to bacteria that produce CH<sub>4</sub> during decomposition of organic material.

- **Nitrous Oxide (N<sub>2</sub>O)** is emitted from human sources such as agricultural soil management, animal manure management, sewage treatment, combustion of fossil fuels, and production of certain acids. N<sub>2</sub>O is produced naturally in soil and water, especially in wet, tropical forests. The primary human-related source of N<sub>2</sub>O is agricultural soil management due to use of synthetic nitrogen fertilizers and other techniques to boost nitrogen in soils. Combustion of fossil fuels (mobile and stationary) is the second leading source of N<sub>2</sub>O, although parts of the world where catalytic converters are used (such as California) have significantly lower levels than those areas that do not.
- **Sulfur Hexafluoride (SF<sub>6</sub>)** is commonly used as an electrical insulator in high-voltage electrical transmission and distribution equipment such as circuit breakers, substations, and transmission switchgear. Releases of SF<sub>6</sub> occur during maintenance and servicing as well as from leaks of electrical equipment.
- **Hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs)** are entirely human made and are mainly generated through various industrial processes. These types of gases are used in aluminum production, semiconductor manufacturing, and magnesium production and processing. HFCs and PFCs are also used as substitutes for ozone-depleting gases like chlorofluorocarbons (CFCs) and halons.

In 1997, the United States (U.S.) was a signatory to the Kyoto Protocol; however, the treaty was not sent to Congress for ratification. Thus, while a signatory to the Kyoto Protocol, the U.S. is not an official party to this international agreement and is not subject to any emission reductions goals established pursuant to the Kyoto Protocol. Although the U.S. is not a party to this agreement, the GHG targeted for reduction by the Kyoto Protocol are also targeted under federal and State GHG reporting and emissions reduction programs.

GHG can remain in the atmosphere long after they are emitted. The potential for a particular greenhouse gas to absorb and trap heat in the atmosphere is considered its global warming potential (GWP). The reference gas for measuring GWP is CO<sub>2</sub>, which has a GWP of one. By comparison, CH<sub>4</sub> has a GWP of 28, which means that one molecule of CH<sub>4</sub> has 28 times the effect on global warming as one molecule of CO<sub>2</sub>. Multiplying the estimated emissions for non-CO<sub>2</sub> GHG by their GWP determines their CO<sub>2</sub> equivalent (CO<sub>2</sub>e), which enables a project's combined GWP to be expressed in terms of mass CO<sub>2</sub> emissions. The GWP and estimated atmospheric lifetimes of the common GHG are shown in Table 10-1.

**Table 10-1:  
 Global Warning Potential (GWP) of Common GHG (100-Year Horizon)**

GHG	GWP <sup>(A)</sup>	GHG	GWP <sup>(A)</sup>
Carbon Dioxide (CO <sub>2</sub> )	1	Perfluorocarbons (PFCs)	
Methane (CH <sub>4</sub> )	28	CF <sub>4</sub>	6,630
Nitrous Oxide (N <sub>2</sub> O)	265	C <sub>2</sub> F <sub>6</sub>	11,100
Hydrofluorocarbons (HFCs)		C <sub>4</sub> F <sub>10</sub>	9,200
HFC-23	12,400	C <sub>6</sub> F <sub>14</sub>	7,910
HFC-134a	1,300	Sulfur Hexafluoride (SF <sub>6</sub> )	23,500
HFC-152a	138		
HCFC-22	1,760		

Source: IPCC 2014

A. GWPs are based on the United Nations Intergovernmental Panel on Climate Change (IPCC) 5<sup>th</sup> Assessment Report

### 10.1.3 Climate Change and California

The 2009 California Climate Adaptation Strategy prepared by the California Natural Resources Agency (CNRA) identified anticipated impacts to California due to climate change through extensive modeling efforts. General climate changes in California indicate that:

- California is likely to get hotter and drier as climate change occurs with a reduction in winter snow, particularly in the Sierra Nevada Mountain Range.
- Some reduction in precipitation is likely by the middle of the century.
- Sea levels will rise up to an estimated 55 inches.
- Extreme events such as heat waves, wildfires, droughts, and floods will increase.
- Ecological shifts of habitat and animals are already occurring and will continue to occur (CNRA, 2009).

It should be noted that changes are based on the results of several models prepared under different climatic scenarios; therefore, discrepancies occur between the projections and the interpretation. The potential impacts of global climate change in California are detailed below.

In January 2018, the CNRA adopted *Safeguarding California Plan: 2018 Update*, which builds on nearly a decade of adaptation strategies to communicate current and needed actions State government should take to build climate change resiliency. It identifies hundreds of ongoing actions and next steps that State agencies are taking to safeguard Californians from climate impacts within a framework of 81 policy principles and recommendations. The 2018 update also has two new chapters and incorporates a feature showcasing the many linkages among policy areas. A new “Climate Justice” chapter highlights how equity is woven throughout the entire plan (CNRA, 2018).

### 10.1.4 Statewide GHG Emissions

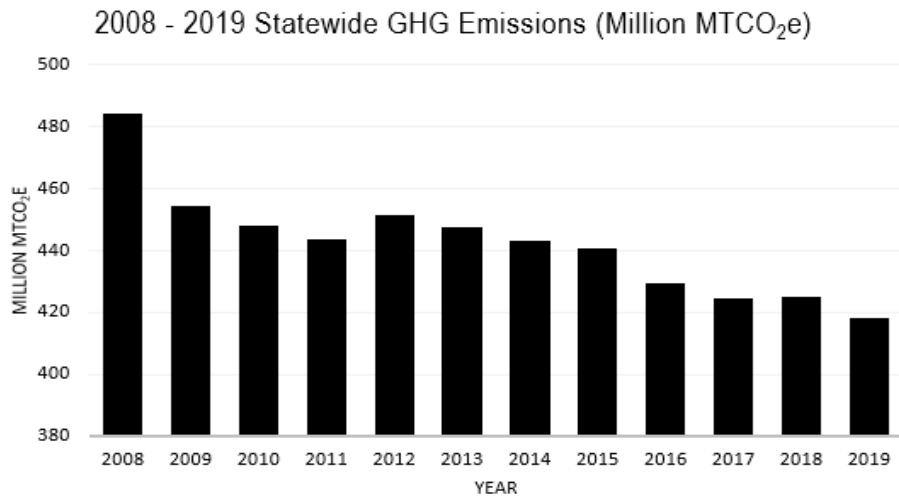
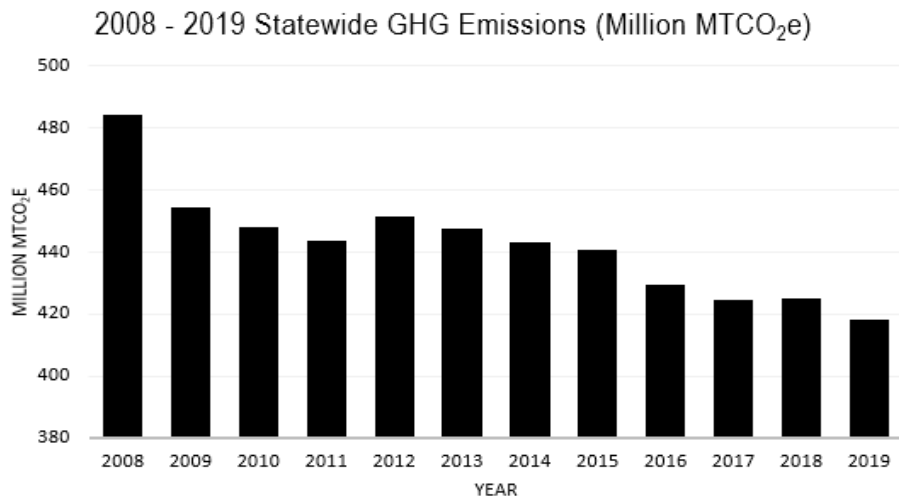
CARB prepares an annual statewide GHG emission inventory using regional, State, and federal data sources, including facility-specific emissions reports prepared pursuant to the State’s Mandatory GHG Reporting Program. The statewide GHG emission inventory helps CARB track progress towards meeting the State’s Assembly Bill (AB) 32 GHG emissions target of 431 million metric tons of CO<sub>2</sub> equivalents (MTCO<sub>2e</sub>), as well as establish and understand trends in GHG emissions.<sup>3</sup> Statewide GHG emissions for the 2009 to 2019 time period are shown in Table 10-2.

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<sup>3</sup>CARB approved use of 431 million MTCO<sub>2e</sub> as the state’s 2020 GHG emission target in May 2014. Previously, the target had been set at 427 million MTCO<sub>2e</sub>.

**Table 10-2:  
 2008-2019 Statewide GHG Emissions (Million MTCO<sub>2</sub>e)**

Scoping Plan Sector	Year											
	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19
Agriculture	35	33	34	34	36	34	35	34	33	33	33	32
Commercial/ Residential	44	45	46	46	44	44	38	39	41	41	41	44
Electric Power	120	101	90	89	98	91	89	85	69	62	63	59
High GWP	12	12	14	15	16	17	18	19	19	20	20	21
Industrial	90	87	91	89	89	92	93	90	89	89	89	88
Recycling and Waste	8	8	8	8	8	8	8	9	9	9	9	9
Transportation	175	168	165	162	161	161	163	166	170	171	170	166
<b>Total Million MTCO<sub>2</sub>e<sup>(A)</sup></b>	<b>484</b>	<b>454</b>	<b>448</b>	<b>444</b>	<b>451</b>	<b>448</b>	<b>443</b>	<b>441</b>	<b>429</b>	<b>425</b>	<b>425</b>	<b>418</b>



Source: CARB, 2022a

A. Totals may not equal due to rounding. CARB inventory uses GWPs based on the United Nations' ICC's 4<sup>th</sup> Assessment Report.

As shown in Table 10-2, statewide GHG emissions have generally decreased over the last decade, with 2019 levels (418 million MTCO<sub>2</sub>e) approximately 13.6% less than 2008 levels (484 million MTCO<sub>2</sub>e) and below the State's 2020 reduction target of 431 million MTCO<sub>2</sub>e. The transportation sector (166 million MTCO<sub>2</sub>e) accounted for more than one-third (approximately 40%) of the state's total GHG emissions inventory (418 million MTCO<sub>2</sub>e) in 2019.

### 10.1.5 Regional GHG Emissions

#### San Francisco Bay Area

The BAAQMD conducts periodic inventories of GHG emissions within the San Francisco Bay Area Air Basin. Data for the most recent inventory (Year 2011) indicates the Bay Area emitted a total of 86.6 million MTCO<sub>2</sub>e, or approximately 20 percent of the total statewide GHG emissions in Year 2011 (BAAQMD 2015).<sup>4</sup> Similar to the state inventory, the combustion of fossil fuels in mobile sources such as cars, trucks, locomotives, ships, and boats contribute the most (34.3 million MTCO<sub>2</sub>e) toward regional GHG levels (approximately 40 percent of regional GHG emissions).

A summary of the 2011 regional GHG emissions inventory, by sector and county, is shown in Table 10-3. Marin County emitted approximately 2.4 million MTCO<sub>2</sub>e, or about 2.8 percent of total regional emissions.

**Table 10-3:  
2011 Bay Area GHG Emissions, By Sector And County (In Million MTCO<sub>2</sub>e)**

Sector	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano <sup>(A)</sup>	Sonoma <sup>(A)</sup>	Total SF Bay Area
Industrial/ Commercial	2.7	17.8	0.4	0.2	1.2	1.4	4.1	2.7	0.5	31.0
Residential Fuel	1.3	1.0	0.3	0.1	0.9	0.8	1.5	0.3	0.4	6.6
Electricity/ Co-Generation	0.9	7.2	0.1	0.1	0.5	0.4	2.2	0.4	0.2	12.0

<sup>4</sup>The BAAQMD GHG inventory is based on the United Nation (U.N.) Intergovernmental Panel on Climate Change's (IPCC) 2<sup>nd</sup> Assessment Report, which uses different GWP values to compute carbon dioxide equivalents. The GWP values in the 2<sup>nd</sup> Assessment Report are generally lower than the values in the U.N. IPCC 4<sup>th</sup> Assessment Report, which the CARB statewide inventory uses. For example, the GWP of methane was reported as 21 in the 2<sup>nd</sup> Assessment Report and is reported as 25 in the 4<sup>th</sup> Assessment Report.

**Table 10-3:  
 2011 Bay Area GHG Emissions, By Sector And County (In Million MTCO<sub>2</sub>e)**

Sector	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano <sup>(A)</sup>	Sonoma <sup>(A)</sup>	Total SF Bay Area
Off-Road Equipment	0.2	0.2	0.0	0.0	0.2	0.1	0.4	0.0	0.1	1.2
Transportation	7.9	5.0	1.3	0.9	3.0	5.0	7.6	1.6	2.0	34.3
Agriculture/ Farming	0.1	0.2	0.2	0.1	0.0	0.0	0.2	0.1	0.2	1.1
TOTAL (All Sectors) <sup>(B)</sup>	13.2	31.4	2.4	1.5	5.7	7.7	16.0	5.1	3.5	86.5

Source: BAAQMD 2015  
 Portions within the BAAQMD.  
 Totals may not equal due to rounding.

The BAAQMD’s 2011 Regional GHG Emissions Inventory also includes a list of the “Top 200” major GHG emitting point source facilities in the region. As of the date of that inventory, Marin County had four of the top 200 major GHG emitting points sources in the region, which were Redwood Landfill Inc. in Novato, New WinCup Holdings, Inc. in Corte Madera, BioMarin Pharmaceutical Inc in Novato, and Cal-Pox, Inc in San Rafael.<sup>5</sup>

**Existing Project GHG Emissions**

The existing land uses in the Project Area contribute to existing County, Regional, and Statewide GHG emissions. Greenhouse gas emissions primarily come from the following sources:

- **Small “area” sources.** Existing land uses generate emissions from small area sources that combust fuel, such as gasoline-powered landscaping equipment.
- **Energy use and consumption.** Existing land uses generate emissions from the combustion of natural gas in building water and space heating equipment, as well as industrial processes. Existing land uses also generated indirect GHG emissions from purchased electricity.

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<sup>5</sup>The 2011 Regional GHG Emissions Inventory is the latest inventory available from the BAAQMD and the list of the top 200 major GHG emitting point source facilities have likely changed over the last decade. For example, WinCup Holdings, Inc. closed in May 2011 and therefore would no longer be on the list.

- **Mobile sources.** Existing land uses generate emissions from vehicles travelling to and from the unincorporated County lands.
- **Solid waste disposal.** Existing land uses generate GHG emissions from the transport and disposal of landfilled waste.
- **Water/wastewater.** Existing land uses generate GHG emissions from electricity used to supply water to land uses, and to treat the resulting wastewater generated.
- **Agriculture.** Agricultural activities, such as those associated with fertilizer application, livestock management, and crop farming / harvesting generate GHG emissions.

The County of Marin adopted a Climate Action Plan (CAP) in December 2020 that included both historical GHG emissions estimates for the unincorporated county for 2005 through 2018 as well as forecasts under a “business as usual” (BAU) scenario for 2030, 2040, and 2050.<sup>6</sup> In August 2021, the County also released a standalone 2019 community-wide GHG emissions inventory for the unincorporated communities of Marin County. The emissions inventories contained in the CAP and 2019 standalone GHG emission inventory were developed using the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions (v. 1.2), which provides emissions factors for various types of sources, such as the combustion of natural gas, propane, gasoline, etc. Consistent with the sector definitions used in the County’s standalone 2019 GHG emissions inventory, this EIR groups GHG emissions by the following sectors (Marin County, 2021).

- **Built Environment – Electricity:** Represents emissions generated from the use of electricity in unincorporated Marin homes and commercial, industrial, and governmental buildings and facilities.
- **Built Environment – Natural Gas:** Represents emissions generated from the use of natural gas in unincorporated Marin homes and commercial, industrial, and governmental buildings and facilities. Propane used as a primary heating source is also included (although it represents less than 1% of emissions in this sector).
- **Transportation:** Includes tailpipe emissions from passenger vehicle trips originating and ending in unincorporated Marin areas, as well as a share of tailpipe emissions generated by medium and heavy-duty vehicles and buses travelling on Marin County roads. Electricity used to power electric vehicles (EVs) is embedded in electricity consumption reported in the Built Environment – Electricity sectors.

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<sup>6</sup>The BAU forecasts in the County’s 2030 CAP assumed energy consumption behaviors (e.g., electricity and natural gas use) would scale linearly from past behaviors. Some regulatory actions that would affect GHG emissions estimates, such as a greener supply of electricity due to the State’s Renewable Portfolio Standard (see “Senate Bill 350 and Senate Bill 100” under Section 10.2.2) and improvements in fuel economy associated with vehicle turnover and the State’s Low Carbon Fuel Regulations (see “Low Carbon Fuel Standard Regulation” under Section 10.2.2) are accounted for in the 2030 CAP’s BAU forecasts.

## 10. Greenhouse Gas Emissions and Energy

- **Off-road Vehicles and Equipment:** Represents emissions from the combustion of gasoline and diesel fuel from the operation of off-road vehicles and equipment used for construction and landscape maintenance.
- **Waste:** Represents fugitive methane emissions that are generated over time as organic material decomposes in the landfill. Although most methane is captured or flared off at the landfill where unincorporated county waste is taken, approximately 25% escapes into the atmosphere.
- **Water:** Represents emissions from energy used to pump, treat, and convey potable water from the water source to unincorporated Marin water users.
- **Wastewater:** Represents stationary, process and fugitive GHGs that are created during the treatment of wastewater generated by the community, as well as emissions created from electricity used to convey and treat wastewater.
- **Agriculture:** Includes methane emissions from enteric fermentation and manure decomposition and treatment, and nitrogen oxide emissions from fertilizer application.

The existing inventories and forecasts contained in the County's CAP were used to develop GHG emissions estimates for the Project EIR's existing conditions year of 2019, based on the data profile developed for the Project. Specifically, the County's existing CAP GHG emissions inventories and forecasts were used to determine historical consumption behaviors (e.g., electricity and natural gas consumption per household, water consumption per service population, etc.) while the Project's household, population, and jobs metrics were used as the pertinent statistical data points for estimating GHG emissions (i.e., the inventory developed for this EIR multiplies the Project's metrics by the rates derived from the GHG emissions inventories contained in the County's CAP). The EIR's GHG emissions inventory generally use the same emission factors and data sources as the CAP inventories and 2019 standalone inventory; the following describes the differences in data sources / emissions factors used in preparing the Project EIR's GHG emissions inventory. See Appendix C for a full list of emissions factors used to develop the EIR inventory.

**Land Use Data.** The EIR GHG inventory is based on consumption and behaviors associated with 29,818 dwelling units, a population of 66,888, and an employment figure of 19,817 (with 335 of those jobs being associated with agriculture and natural resources).

**Traffic Model.** Whereas the County's existing CAP was developed using vehicle miles traveled (VMT) projections from Plan Bay Area 2040, which utilized the Metropolitan Transportation Commissions (MTC's) Travel Model One (TM1), this EIR's 2019 GHG emissions estimates are based on the TAMDM/TM2 model. The TM1 only has 1,454 zones for the entire nine-county Bay Area while the TM2 has over 39,000 zones, with around 2,000 in Marin County alone. The TAMDM/TM2 improved upon the TM1 by utilizing a higher resolution of spatial detail (both for highway and land use) and removed some constraints / assumptions that were built into the TM1 by relying on more data sources to calibrate the TM2. TM1 and TM2 have been observed to generally be consistent, in terms of roadway volumes and VMT at the freeway/County/Bay Area-level, but are not as well correlated when evaluating VMT at more local levels, such as unincorporated county land (Fehr and Peers 2022). It was observed that the Napa Solano



model that was developed using TM2 also showed that the TM1 model provided a much lower estimate of VMT than those generated by TM2 (TAM 2022).

**VMT Estimates.** The average, daily VMT estimate prepared by Kittelson and Associates for the existing land uses in 2019 (1,821,199 miles per day) within the Project Area was then annualized using a multiplication factor of 347 days per year, the same factor used in CARB's 2000-2012 Greenhouse Gas Emissions Inventory (CARB, 2014a; Kittelson, 2022).<sup>7</sup> This results in approximately 631,956,053 annual VMT.

**Mobile Source Emissions Factors.** The EIR Inventory's transportation emissions estimates were derived using a single emissions factor derived from the California Air Resources Board's Emissions Factor Model (EMFAC) 2021 (v1.0.2). This is in contrast to the CAP and 2019 Standalone Inventory, which used the EMFAC2017 model, and derived different emission factors for passenger vehicles, commercial vehicles, and buses.

**Embedded GHG Intensity of Electricity.** The Project EIR's GHG emissions inventory continues to assume electricity consumed in the unincorporated community comes from Pacific Gas and Electric (PG&E) (approximately 23%), MCE Clean Energy (MCE) (approximately 71%), and direct access energy (approximately 7%). The weighted emissions factors developed for this EIR reflect recent sustainability reports released by PG&E and MCE; the emission factor for direct access energy that were used in the County's CAP were held constant.

The Project Area's existing GHG emissions, based on the Project's metrics, are presented below in Table 10-4 and compared against the separate, standalone 2019 GHG emission inventory prepared for the unincorporated county in August 2021.

**Table 10-4:  
Existing 2019 GHG Emissions Inventories (EIR and Standalone Report)**

Sector	Metric Tons CO <sub>2</sub> e	
	2019 Standalone Inventory	EIR Inventory (2019)
Built Environment – Electricity	21,475	25,697
Built Environment – Natural Gas	94,574	94,939
Transportation	115,499	255,601
Off-road Vehicles and Equipment	4,328	4,263
Waste	15,476	18,421
Water	110	111
Wastewater	1,797	1,813
Agriculture	135,585	121,645
Total	389,023	522,490
Population	69,343	66,888
GHG per Capita	5.6	7.8

Source: Marin County 2020 and Appendix C

<sup>7</sup>The multiplication factor of 347 days accounts for differences in mobile source activity on weekdays and weekends (CARB, 2014a). Subsequent Greenhouse Gas Emissions Inventories prepared by CARB have used the same methodology as described in the 2000-2012 inventory.

As shown in Table 10-4, there is general agreement between the emissions sectors of the EIR Inventory and the 2019 Standalone Inventory, except for the Transportation sector. The differences in emissions are primarily driven by the use of the Plan Bay Area 2040 (TM1) for the 2019 Standalone Inventory and the use of the TAMDM (TM2) model used for the EIR Inventory, but are also related to minor differences in land use assumptions between the two inventories. These differences are discussed above Table 10-4.

### **10.1.6 Energy**

Energy is primarily categorized into three areas: electricity, natural gas, and fuels used for transportation. According to the U.S. Energy Information Administration (USEIA), California is the most populous state in the U.S., representing 12 percent of the total national population, has the largest economy, and is second only to Texas in total energy consumption. However, California has one of the lowest per capita energy consumption levels in the U.S. This is a result of California's mild climate, extensive efforts to increase energy efficiency, and implementation of alternative technologies. California leads the nation in electricity generation from solar, geothermal, and biomass resources (USEIA, 2022a).

#### **Electricity**

In 2020, the California electric system generated 272,576 gigawatt-hours (GWh) of electricity. Approximately 70% of this generation occurred in-state (190,913 GWh), while approximately 30% was imported to the California system but generated outside the state (81,663 GWh). Approximately one-third of California's total power mix was from renewable sources (CEC, 2021a). In 2020, Marin County (incorporated and unincorporated areas) consumed approximately 1,330 GWh of electricity, about 0.5% of the state's total electricity generated that year (CEC, 2022a).

Pacific Gas and Electric (PG&E) and MCE are the electricity utility providers in Marin County, with MCE being the primary provider for customers in unincorporated Marin County. In 2020, PG&E sold approximately 35,838 million kilowatt hours (kWh) of electricity; approximately 85 percent of that electricity was GHG free in 2020 (PG&E 2021).<sup>8</sup> In contrast, MCE provided approximately 5,262 million kWh in 2020 (MCE 2021). MCE offers customers three energy choices. Light Green is MCE's standard service, offering a minimum of 60% renewable electricity to the bulk of MCE's customers. Deep Green offers customers 100% California renewable energy, half from wind resources and half from solar resources. Local Sol offers a second 100% renewable energy option of locally sourced solar for those who would prefer to purchase power exclusively from within MCE's service area.

Based on the energy consumption rates derived from the County's 2030 CAP, existing development in the Project Area was estimated to consume approximately 329,158,074 kWh of electricity in 2019 with approximately 196,846,525 kWh of that electricity (60 percent) coming

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<sup>8</sup>It should be noted that this power supply estimate for PG&E covers the supplier's entire service area.

from the residential use consumption. Based on a service population<sup>9</sup> (SP) of 86,705, this works out to an overall consumption rate of approximately 3,796 kWh/SP-yr.

### **Natural Gas**

California accounts for less than 1 percent of total U.S. natural gas reserves and production; however, almost two-thirds of California households use natural gas for home heating (U.S. EIA 2022b). In 2020, California consumed about 12,332 million therms of natural gas. Approximately 39 percent of this natural gas was consumed by the residential sector. Marin County (incorporated and unincorporated areas) consumed approximately 67 million therms of natural gas in the same year, accounting for approximately 0.5 percent of statewide consumption. The residential and non-residential sectors made up approximately 75 percent and 25 percent of county-wide consumption (CEC 2022b).

PG&E provides natural gas service to the Project Area. PG&E is the principal distributor of natural gas in Northern California and provides natural gas for residential, commercial, and industrial markets. The annual gas sale to all markets in 2020 was approximately 4,509 million therms (CEC 2022c).

Based on energy consumption rates derived from the County's 2030 CAP, the existing development in the Project Area was estimated to consume approximately 17,360,429 therms in 2019 with approximately 13,282,688 therms of that natural gas (77 percent) coming from residential land use consumption. Residential land uses were also estimated to consume approximately 461,409 gallons of propane for residential stationary combustion. Based on a SP of 86,705, this works out to an overall consumption rate of approximately 200 therms/SP-yr.

### **Transportation**

California's transportation sector consumed approximately 59.6 billion Btu of energy per capita in 2020, which ranked 46<sup>th</sup> in the nation (U.S. EIA 2022c).<sup>10</sup> Most gasoline and diesel fuel sold in California for motor vehicles is refined in California to meet state-specific formulations required by the California Air Resources Board.

Statewide taxable sales figures indicate a total of 13,060 million gallons of gasoline and 3,105 million gallons of diesel fuel were sold in the 2021 fiscal year (CDTFA 2022). The CEC estimates that in 2020 Marin County sold 77 million gallons of gasoline, accounting for 0.6% of statewide gasoline sales, and 4 million gallons of diesel, accounting for 0.2% of statewide diesel sales (CEC 2022d).

Based on the VMT estimates prepared by Kittelson and Associates and fuel consumption rates derived from EMFAC, the existing land uses in the Project Area are estimated to generate approximately 1,821,199 VMT per day, or approximately 631,956,053 VMT per year, resulting in

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<sup>9</sup>Service population is the sum of residents and employees in a given area.

<sup>10</sup>This means that California had the 6<sup>th</sup> best transportation energy per capita rate (i.e., most efficient) in the United States, including the District of Columbia.

the annual consumption of approximately 2,825,813 gallons of diesel, 25,859,547 gallons of gasoline, and 6,647,137 kWh to power vehicles in unincorporated Marin County.

## **10.2 REGULATORY SETTING**

### **10.2.1 International and Federal**

#### **International Regulation and the Kyoto Protocol**

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United States joined other countries around the world in signing the “United Nations’ Framework Convention on Climate Change” agreement with the goal of controlling GHG emissions. As a result, the Climate Change Action Plan was developed to address the reduction of GHG in the United States. The plan currently consists of more than 50 voluntary programs for member nations to adopt.

#### **Federal Regulation and the Clean Air Act**

On December 7, 2009, the U.S. EPA issued an endangerment finding that current and projected concentrations of the six Kyoto GHGs in the atmosphere (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, HFCs, and PFCs) threaten the public health and welfare of current and future generations. This finding came in response to the Supreme Court ruling in *Massachusetts v. EPA*, which found that GHGs are pollutants under the Federal Clean Air Act. As a result, the U.S. EPA issued its GHG Tailoring Rule in 2010, which applies to facilities that have the potential to emit more than 100,000 MTCO<sub>2</sub>e. In 2014, the U.S. Supreme Court issued its decision in *Utility Air Regulatory Group v. EPA* (No. 12-1146), finding that the U.S. EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a “major” source required to obtain a permit pursuant to the “Clean Air Act’s Prevention of Significant Deterioration” or “Title V” operating permit programs. The U.S. EPA’s Greenhouse Gas Reporting Program requires facilities that emit 25,000 MTCO<sub>2</sub>e or more of GHG to report their GHG emissions to the U.S. EPA to inform future policy decisionmakers.

#### **The Current Administration**

Former President Trump and the United States Environmental Protection Agency (U.S. EPA) during the time of the Trump administration stated their intent to halt various federal regulatory activities to reduce GHG emissions. President Biden, who took office in January 2021, and his administration have begun to strengthen federal policy once again around GHG emissions on a national level. California and other states are still challenging some federal actions undertaken during the time of the Trump administration that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. The timing and consequences of these types of federal decisions and potential responses from California and other states are speculative at this time.

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). While the United States signed the Kyoto Protocol, which would have required reductions in GHGs, Congress never ratified the protocol. The federal government chose

voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science. In 2015, the Paris Agreement was adopted, which aims at keeping global temperature rise this century below 2 degrees Celsius above pre-industrial levels and pursuing efforts to limit temperature increase above an additional 1.5 degrees Celsius. The Agreement was signed by President Obama in April 2016, but the agreement does not contain enforcement provisions that would require U.S. Senate ratification. On November 4, 2019, Former President Trump formally began the process to leave the Paris Climate Agreement. In accordance with Article 28 of the Paris Agreement, that process was complete on November 4, 2020. As one of his first acts in the Oval Office, President Biden signed an executive order to have the United States rejoin the Paris Climate Agreement. At this time, there are no federal regulations or policies pertaining to GHG emissions that directly apply to the project.<sup>11</sup>

### **Federal Energy Policy and Conservation Act**

In 1975, Congress enacted the Federal Energy and Policy Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards.

### **Energy Independence and Security Act of 2007**

On December 19, 2007, the Energy Independence and Security Act of 2007 was signed into law. In addition to setting increased Corporate Average Fuel Economy (CAFE) standards for motor vehicles, the act also includes the following provisions related to energy efficiency:

- Renewable fuel standards (RFS)
- Appliance and lighting efficiency standards
- Building energy efficiency

This federal legislation requires ever-increasing levels of renewable fuels to replace petroleum. The U.S. EPA is responsible for developing and implementing regulations to ensure transportation fuel sold in the United State contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel produces, and other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the Energy Independence and Security Act of 2007 (EISA), the RFS program was expanded in several key ways that laid the foundation for achieving significant reductions of

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<sup>11</sup>Although the U.S. EPA announced the Clean Power Plan on August 3, 2015, which sets standards for power plants and customizes goals for states to cut their carbon pollution, the U.S. Supreme Court stayed implementation of the Plan on February 9, 2016, pending further judicial review.

GHG emissions through the use of renewable fuels, for reducing imported petroleum, and for encouraging the development and expansion of the nation's renewable fuels sector. The updated program is referred to as RFS2 and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline;
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022;
- EISA established new categories of renewable fuel and set separate volume requirements for each one; and
- EISA required the U.S. EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHG than the petroleum fuel it replaces (U.S. EPA 2015).

Additional provisions of the EISA address energy savings in government and public institutions, promoting research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green jobs."

### **Federal Vehicle Standards**

In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, the U.S. EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, U.S. EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO<sub>2</sub> in model year 2025, on an average industry fleetwide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO<sub>2</sub> emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the U.S. EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6% to 23% over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018–2027 for certain trailers, and model years 2021–2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO<sub>2</sub> emissions by approximately 1.1 billion

metric tons (MT) and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (U.S. EPA and NHTSA, 2016).

On August 2018, The USEPA and NHTSA released a notice of proposed rulemaking called Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule).

On September 27, 2019, the U.S. EPA and the NHTSA published the SAFE Vehicles Rule Part One: One National Program.” (84 Fed. Reg. 51,310 (Sept. 27, 2019.)) The Part One Rule revoked California’s authority to set its own greenhouse gas emissions standards and set zero emission vehicle mandates in California. As a result of the loss of the zero emission vehicles (ZEV) sales requirements in California, there may be fewer ZEVs sold and thus additional gasoline-fueled vehicles sold in future years (CARB 2019).

In April 2020, the U.S. EPA and NHTSA issued the SAFE Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (Final SAFE Rule) that relaxed federal greenhouse gas emissions and fuel economy standards. The Final SAFE Rule relaxed federal greenhouse gas emissions and Corporate Average Fuel Economy (CAFE) standards to increase in stringency at approximately 1.5 percent per year from model year (MY) 2020 levels over MYs 2021–2026. The previously established emission standards and related “augural” fuel economy standards would have achieved approximately 4 percent per year improvements through MY 2025. The Final SAFE Rule affects both upstream (production and delivery) and downstream (tailpipe exhaust) CO<sub>2</sub> emissions (CARB 2020) and has been challenged by 23 states. NHTSA repealed and the U.S. EPA rescinded the SAFE Rule Part One in December 2021 and March 2022, respectively, restoring California’s authority to implement its GHG standards and ZEV mandates (NHTSA 2022, U.S. EPA 2022).

## 10.2.2 State and Regional

### **Assembly Bill 32 (California Global Warming Solutions Act) and Related GHG Goals**

In September 2006, Governor Arnold Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006. AB 32 establishes the caps on statewide greenhouse gas emissions proclaimed in Executive Order (EO) S-3-05 and established the timeline for meeting State GHG reduction targets. The deadline for meeting the 2020 reduction target is December 31, 2020.

As part of AB 32, CARB determined 1990 GHG emissions levels and projected a “business-as-usual” (BAU)<sup>12</sup> estimate for 2020, to determine the amount of GHG emission reductions that would need to be achieved. In 2007, CARB approved a statewide 1990 emissions level and corresponding 2020 GHG emissions limit of 427 million MTCO<sub>2</sub>e (CARB 2007). In 2008, CARB adopted its *Climate Change Scoping Plan*, which projects 2020 statewide GHG emissions levels of 596 million MTCO<sub>2</sub>e and identifies numerous measures (i.e., mandatory rules and regulations

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<sup>12</sup>BAU is a term used to define emissions levels without considering reductions from future or existing programs or technologies.

and voluntary measures) that will achieve at least 174 million MTCO<sub>2</sub>e of GHG reductions and bring statewide GHG emissions to 1990 levels by 2020 (CARB 2009).

EO B-30-15, 2030 Carbon Target and Adaptation, issued by Governor Brown in April 2015, set a target of reducing GHG emissions by 40 percent below 1990 levels in 2030. To achieve this ambitious target, Governor Brown identified five key goals for reducing GHG emissions in California through 2030:

- Increase renewable electricity to 50 percent.
- Double energy efficiency savings achieved in existing buildings and make heating fuels cleaner.
- Reduce petroleum use in cars and trucks by up to 50 percent.
- Reduce emissions of short-lived climate pollutants.
- Manage farms, rangelands, forests, and wetlands to increasingly store carbon.

By directing State agencies to take measures consistent with their existing authority to reduce GHG emissions, EO B-30-15 establishes coherence between the 2020 and 2050 GHG reduction goals set by AB 32 and seeks to align California with the scientifically established GHG emissions levels needed to limit global warming below two degrees Celsius.

To reinforce the goals established through EO B-30-15, Governor Brown signed SB 32 and AB 197 on September 8, 2016. SB 32 made the GHG reduction target (to reduce GHG emissions by 40 percent below 1990 levels by 2030) a requirement, as opposed to a goal. AB 197 gives the Legislature additional authority over CARB to ensure the most successful strategies for lowering emissions are implemented, and requires CARB to, “protect the State’s most impacted and disadvantaged communities ...[and] consider the social costs of the emissions of greenhouse gases.”

### **Scoping Plan**

The CARB Scoping Plan is the comprehensive plan primarily directed at identifying the measures necessary to reach the GHG reduction targets stipulated in AB 32. The key elements of the 2008 Scoping Plan were to expand and strengthen energy efficiency programs, achieve a statewide renewable energy mix of 33 percent, develop a cap-and-trade program with other partners (including seven states in the United States and four territories in Canada) in the Western Climate Initiative, establish transportation-related targets, and establish fees (CARB 2009). CARB estimated that implementation of these measures will achieve at least 174 million MTCO<sub>2</sub>e of reductions and reduce statewide GHG emissions to 1990 levels by 2020 (CARB 2009).

In a report prepared on September 23, 2010, CARB indicated 40 percent of the reduction measures identified in the Scoping Plan had been secured (CARB 2010). Although the cap-and-trade program began on January 1, 2012 (after CARB completed a series of activities dealing with the registration process, compliance cycle, and tracking system), covered entities did not have an emissions obligation until 2013. In August 2011, the Scoping Plan was reapproved by CARB with the program’s environmental documentation.



On February 10, 2014, CARB released the public draft of the “First Update to the Scoping Plan.” “The First Update” built upon the 2008 Scoping Plan with new strategies and recommendations, and identified opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments (CARB 2014b). “The First Update” defined CARB’s climate change priorities over the next five years, and set the groundwork to reach post-2020 goals set forth in Executive Orders S-3-05 and B-16-12. It also highlighted California’s progress toward meeting the 2020 GHG emission reduction goals defined in the 2008 Scoping Plan. “The First Update” evaluated how to align the State’s long-term GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. “The First Update” to the Scoping Plan was approved by the Board on May 22, 2014.

The second update to the scoping plan, the 2017 Climate Change Scoping Plan update (CARB 2017), was adopted by CARB in December 2017. The primary objective for the 2017 Climate Change Scoping Plan is to identify the measures required to achieve the mid-term GHG reduction target for 2030 (i.e., reduce emissions by 40 percent below 1990 levels by 2030) established under EO B-30-15 and SB 32. The 2017 Climate Change Scoping Plan identifies an increased need for coordination among State, regional, and local governments to realize the potential for GHG emissions reductions that can be gained from local land use decisions. It notes that emissions reductions targets set by more than one hundred local jurisdictions in the state could result in emissions reductions of up to 45 million MTCO<sub>2e</sub> and 83 million MTCO<sub>2e</sub> by 2020 and 2050, respectively. To achieve these goals, the 2017 Scoping Plan Update includes a recommended plan-level efficiency threshold of six metric tons or less per capita by 2030 and no more than two metric tons per capita by 2050. The major elements of the 2017 Climate Change Scoping Plan framework include:

- Implementing and/or increasing the standards of the Mobile Source Strategy, which include increasing zero emission vehicle (ZEV) buses and trucks.
- Low Carbon Fuel Standard (LCFS), with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewable Portfolio Standard (RPS) to 50 percent and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks.
- Implementing the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing CH<sub>4</sub> and hydrocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- 20 percent reduction in GHG emissions from refineries by 2030.
- Development of a Natural and Working Lands Action Plan to secure California’s land base as a net carbon sink.

The Draft 2022 Scoping Plan was released in May 2022. The plan presents a scenario for California to meet the State goal of reducing GHG emissions 40% below 1990 levels by 2030 and to achieve carbon neutrality by 2045 (CARB 2022b). The Draft 2022 Scoping Plan is expected to be finalized in the fall of 2022.

### **Senate Bill 375 (Sustainable Communities and Climate Protection Act) and Plan Bay Area 2050**

In January 2009, California SB 375 went into effect known as the Sustainable Communities and Climate Protection Act. The objective of SB 375 is to better integrate regional planning of transportation, land use, and housing to reduce greenhouse gas emissions and other air pollutants. SB 375 tasks CARB to set GHG reduction targets for each of California's 18 regional Metropolitan Planning Organizations (MPOs). Each MPO is required to prepare a Sustainable Communities Strategy (SCS) as part of their Regional Transportation Plan (RTP). The SCS is a growth strategy in combination with transportation policies that will show how the MPO will meet its GHG reduction target. If the SCS cannot meet the reduction goal, an Alternative Planning Strategy may be adopted that meets the goal through alternative development, infrastructure, and transportation measures or policies.

Plan Bay Area was the integrated long-range transportation, land-use, and housing plan developed for the Bay Area pursuant to SB 375 that was adopted by the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC) in 2013. An update to Plan Bay Area, titled Plan Bay Area 2040, was jointly approved by the ABAG Executive Board and by MTC in 2017. Plan Bay Area and Plan Bay Area 2040 identified Priority Development Areas (PDAs), which were transit-oriented infill development opportunities in areas where future growth would not increase urban sprawl. There are two PDAs, the San Rafael Transit Center PDA in downtown San Rafael, and the Unincorporated Marin County PDA in Marin City, that are located in Marin County.

On October 1, 2021, MTC and AMBAG released Plan Bay Area 2050 which focused on the elements of Housing, Economy, Transportation, and Environment. Across these elements, there are a total of 35 strategies, which are long-term policies or investments, and 80 implementation actions, which contain advocacy and legislation, initiatives, and planning and research. Plan Bay Area 2050 projected that it would achieve a 20% reduction in GHG emissions from cars and light duty trucks by 2035 if all of its strategies were implemented, which would meet SB 375's GHG target.

The housing strategies needed to achieve this reduction include the following:

- **Protect and Preserve Affordable Housing**
  - Further strengthen renter protections beyond state law. Building upon recent tenant protection laws, limit annual rent increases to the rate of inflation, while exempting units less than 10 years old
  - Preserve existing affordable housing. Acquire homes currently affordable to low and middle-income residents for preservation as permanently deed-restricted affordable housing.

- Spur Housing Production for Residents of All Income Levels
  - Allow a greater mix of housing densities and types in Growth Geographies. Allow a variety of housing types at a range of densities to be built in Priority Development Areas, select Transit-Rich Areas and select High-Resource Areas.
  - Build adequate affordable housing to ensure homes for all. Construct enough deed-restricted affordable homes to fill the existing gap in housing for the unhoused community and to meet the needs of low-income households.
  - Integrate affordable housing into all major housing projects. Require a baseline of 10-20% of new market-rate housing developments of five units or more to be affordable to low-income households.
  - Transform aging malls and office parks into neighborhoods. Permit and promote the reuse of shopping malls and office parks with limited commercial viability as neighborhoods with housing for residents at all income levels.
- Create Inclusive Communities
  - Provide targeted mortgage, rental and small business assistance to Equity Priority Communities. Provide assistance to low-income communities and communities of color to address the legacy of exclusion and predatory lending, while helping to grow locally owned businesses.
  - Accelerate reuse of public and community-owned land for mixed-income housing and essential services. Help public agencies, community land trusts and other non-profit landowners accelerate the development of mixed-income affordable housing

### **Senate Bill 350 (Clean Energy & Pollution Reduction Act) and Senate Bill 100**

SB 350 was signed into Law in September 2015 and establishes tiered increases to the RPS. The Bill requires 40 percent of the state's energy supply to come from renewable sources by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

The State's RPS program was further strengthened by the passage of SB 100 in 2018. SB 100 revised the State's RPS Program to require retail sellers of electricity to serve 50 percent and 60 percent of the total kilowatt-hours sold to retail end-use customers be served by renewable energy sources by 2026 and 2030, respectively, and requires 100 percent of all electricity supplied come from renewable sources by 2045.

### **Assembly Bill 1493, Low Carbon Fuel Standard Regulation, and Advanced Clean Cars**

*Program, EO B-48-18, and EO N-79-20*

With the passage of AB 1493 (Pavley I) in 2002, California launched an innovative and proactive approach for dealing with GHG emissions and climate change at the state level. AB 1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards apply to automobiles and light trucks from 2009

through 2016. Although litigation was filed challenging these regulations and the U.S. EPA initially denied California's related request for a waiver, a waiver was granted. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model years 2017 through 2025 among light-duty vehicles.

In January 2012, CARB approved the Advanced Clean Cars (ACC) Program (formerly known as Pavley II) for model years 2017-2025. The components of the ACC program are the Low-Emission Vehicle (LEV) regulations and the ZEV regulation. The Program combines the control of smog, soot, and global warming gases with requirements for greater numbers of zero-emission vehicles into a single package of standards. By 2025, new automobiles under California's Advanced Clean Car program will emit 34 percent less global warming gases and 75 percent less smog-forming emissions.

CARB has begun the rulemaking process for strengthening the compliance target of the LCFS through the year 2030. For a new LCFS target, the preferred scenario in the 2017 Scoping Plan Update identifies an 18 percent reduction in average transportation fuel carbon intensity, compared to a 2010 baseline, by 2030 as one of the primary measures for achieving the state's GHG 2030 target. Achieving the SB 32 reduction goals will require the use of a low carbon transportation fuels portfolio beyond the amount expected to result from the current compliance schedule (CARB 2017).

EO B-48-18, issued by Governor Brown in January 2018, establishes a target to have five million ZEVs on the road in California by 2030. This Executive Order is supported by the State's 2018 ZEV Action Plan Priorities Update, which expands upon the State's 2016 ZEV Action Plan. While the 2016 plan remains in effect, the 2018 update function as an addendum, highlighting the most important actions State agencies are taking in 2018 to implement the directives of Executive Order B-48-18.

EO N-79-20, issued by Governor Newsom in September 2020, set a goal that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. It also set a goal that 100 percent of medium- and heavy-duty vehicles in the state be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks. In addition, this EO set a goal of to transition to 100 percent zero-emission off-road vehicles and equipment in the state by 2035 where feasible.

### **Executive Order B-30-15, Senate Bill 32 & Assembly Bill 197 (Statewide Interim GHG Targets)**

California EO B-30-15 (April 29, 2015) set an "interim" statewide emission target to reduce greenhouse emissions to 40 percent below 1990 levels by 2030, and directed state agencies with jurisdiction over GHG emissions to implement measures pursuant to statutory authority to achieve this 2030 target and the 2050 target of 80 percent below 1990 levels. Specifically, the EO directed CARB to update the Scoping Plan to express this 2030 target in metric tons.

To achieve this ambitious target, Governor Brown identified five key goals for reducing GHG emissions in California through 2030:

- Increase the amount of renewable electricity provided state-wide to 50 percent.
- Double energy efficiency savings achieved in existing buildings and make heating fuels cleaner.
- Reduce petroleum use in cars and trucks by up to 50 percent.
- Reduce emissions of short-lived climate pollutants.
- Manage farms, rangelands, forests, and wetlands to increasingly store carbon.

AB 197 (September 8, 2016) and SB 32 (September 8, 2016) codified into statute the GHG emissions reduction targets of at least 40 percent below 1990 levels by 2030 as detailed in EO B-30-15. AB 197 also requires additional GHG emissions reporting that is broken down to sub-county levels and requires CARB to consider the social costs of emissions impacting disadvantaged communities.

### **Executive Order B-55-18**

Governor Brown issued EO B-15-18 on September 10, 2018, which directs the State to achieve carbon neutrality as soon as possible, no later than 2045, and achieve and maintain net negative emissions thereafter.

### **Title 24 Energy Standards**

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings in 1978 in response to a legislative mandate to reduce energy consumption in the State. Although not originally intended to reduce GHG emissions, increased energy efficiency, and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically to allow for the consideration and inclusion of new energy efficiency technologies and methods.

Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code (CALGreen Code). The purpose of the CALGreen Code is to “improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality.” The CALGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC).

CALGreen contains both mandatory and voluntary measures. For non-residential land uses there are 39 mandatory measures including, but not limited to exterior light pollution reduction, wastewater reduction by 20 percent, and commissioning of projects over 10,000 square feet. Two tiers of voluntary measures apply to non-residential land uses, for a total of 36 additional elective measures.

California's Building Energy Efficiency Standards are updated on an approximately three-year cycle. The 2019 standards, focused on three key areas: proposing new requirements for installation of solar photovoltaics for newly constructed low-rise residential buildings, updating current ventilation and Indoor Air Quality (IAQ) requirements, and extending Title 24 Part 6 to apply to healthcare facilities. The 2019 Building Energy Efficiency Standard were approximately 53 percent more than the 2016 Title 24 Energy Standards for residential development and approximately 30 percent more efficient for non-residential development. The 2022 standards, which were adopted in August 2021, go into effect January 1, 2023. The 2022 Building Energy Efficiency Standards focuses on establishing or expanding standards for electric heat pumps, for single-family homes to be electric-ready, for solar photovoltaic system and battery storage, and for ventilation systems (CEC 2021b).

### **Low Carbon Fuel Standard Regulation**

CARB initially approved the LCFS regulation in 2009, identifying it as one of the nine discrete early action measures in the *2008 Scoping Plan* to reduce California's GHG emissions. The LCFS regulation defines a Carbon Intensity, or "CI," reduction target (or standard) for each year, which the rule refers to as the "compliance schedule." The LCFS regulation requires a reduction of at least 10 percent in the CI of California's transportation fuels by 2020 and maintains that target for all subsequent years.

In 2018, CARB approved amendments to the LCFS regulation, which included strengthening and smoothing the carbon intensity benchmarks through 2030 in-line with California's 2030 GHG emission reduction target enacted through SB 32, adding new crediting opportunities to promote zero emission vehicle adoption, alternative jet fuel, carbon capture and sequestration, and advanced technologies to achieve deep decarbonization in the transportation sector. Under the 2018 amendment, the LCFS regulation now requires a reduction of at least 20 percent in CI by 2030 and beyond.

### **10.2.3 Bay Area Air Quality Management District**

#### **Clean Air Plan**

On April 19, 2017, the BAAQMD adopted the *2017 Clean Air Plan: Spare the Air, Cool the Climate* (2017 Clean Air Plan), which updates the adopted Bay Area *2010 Clean Air Plan*, and continues to provide the framework for assuring that the NAAQS and CAAQS are attained and maintained in the Bay Area (BAAQMD 2017). In addition to addressing criteria air pollutant concentrations and public exposure to toxic air contaminants, the 2017 Clean Air Plan lays the groundwork for a long-term effort to reduce Bay Area GHG emissions 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050, consistent with GHG reduction targets adopted by the State of California.

As opposed to focusing solely on the nearer 2030 GHG reduction target, the 2017 Clean Air Plan makes a concerted effort to imagine and plan for a successful and sustainable Bay Area in the year 2050. In 2050, the Bay area is envisioned as a region where:

- Energy efficient buildings are heated, cooled, and powered by renewable energy;

- The transportation network has been redeveloped with an emphasis on non-vehicular modes of transportation and mass-transit;
- The electricity grid is powered by 100 percent renewable energy; and
- Bay Area residents have adopted lower-carbon intensive lifestyles (e.g., purchasing low-carbon goods in addition to recycling and putting organic waste to productive use).

The 2017 Clean Air Plan includes a comprehensive, multipollutant control strategy that includes 85 distinct measures and is categorized based on the same economic sector framework used by CARB for the AB 32 Scoping Plan Update.<sup>13</sup> The accumulation of all 85 control measures being implemented support the three overarching goals of the plan. These goals are:

- Attain all state and national air quality standards;
- Eliminate disparities among Bay Area communities in cancer health risk from toxic air contaminants; and
- Reduce Bay Area GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050.

#### 10.2.4 Local

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) is a long-range general plan for the unincorporated areas of Marin County. Applicable adopted CWP policies include:

##### **Built Environment Element –Atmosphere and Climate policies**

- Policy AIR-4.2 Foster the Absorption of Greenhouse Gases. Foster and restore forests and other terrestrial ecosystems that offer significant carbon mitigation potential.
- Implementing Program AIR-4.a Reduce Greenhouse Gas Emissions Resulting from Energy Use in Buildings. Implement energy efficiency programs and use of renewable energy.
- Implementing Program AIR-4.b Reduce Greenhouse Gas Emissions Resulting from Transportation. Increase clean-fuel use, promote transit-oriented development and alternative modes of transportation, and reduce travel demand.
- Implementing Program AIR-4.c Reduce Methane Emissions Released from Waste Disposal. Encourage recycling, decrease waste sent to landfills, require landfill methane recovery, and promote methane recovery for energy production from other sources.
- Implementing Program AIR-4.d Reduce Greenhouse Gas Emissions from Agriculture. Compile an inventory of agricultural greenhouse gas emissions. Partner with AgStar, the

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<sup>13</sup>The sectors included in the AB 32 Scoping Plan Update are: stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants.

## 10. Greenhouse Gas Emissions and Energy

U.S. Department of Agriculture, and the U.S. Department of Energy to encourage the use of methane recovery technologies and determine potential use in energy production.

- Implementing Program AIR-4.e Reduce County Government Contributions to Greenhouse Gas Emissions. Where feasible, replace fleet vehicles with hybrid fuel and other viable alternative fuel vehicles, increase energy efficiency of County-maintained facilities, increase renewable energy use at County-maintained facilities, adopt purchasing practices that promote emissions reductions, and increase recycling at County-maintained facilities.
- Implementing Program AIR-4.f Establish a Climate Change Planning Process. Continue implementation of the approved Marin County Greenhouse Gas Reduction Plan. Integrate this plan into long-range and current planning functions of other related agencies. Establish and maintain a process to implement, measure, evaluate, and modify implementing programs, using the Cities for Climate Protection Campaign as a model.
- Implementing Program AIR-4.g Work with Bay Area Governments to Address Regional Climate Change Concerns. Play a leading role to encourage other local governments to commit to addressing climate change. Participate in programs such as the Cities for Climate Protection Campaign to address local and regional climate change concerns.
- Implementing Program AIR-4.h Evaluate the Carbon Emissions Impacts of Proposed Developments. Incorporate a carbon emissions assessment into land use plans and the environmental impact report for proposed projects.
- Implementing Program AIR-4.i Work with Appropriate Agencies to Determine Carbon Uptake and Storage Potential of Natural Systems. Study Marin's wetlands, forests, baylands, and agricultural lands to determine the potential to sequester carbon over time. Determine their value as carbon sinks.
- Implementing Program AIR-4.j Acquire and Restore Natural Resource Systems. Take and require all technically feasible measures to avoid or minimize potential impacts on existing natural resource systems that serve as carbon sinks.
- Implementing Program Adopt urban forestry practices that encourage reforestation as a means of storing carbon dioxide.
- Implementing Program AIR-4.l Preserve Agricultural Lands. Protect agricultural lands and soils that serve as carbon sinks.
- Implementing Program AIR-4.m Focus Development in Urban Corridors. Build in urban corridors and limit development in natural resource areas. Encourage green spaces that serve as carbon sinks in urban corridors.
- Implementing Program AIR-4.n Monitor for Carbon Storage Research. Monitor federal and international research on technological approaches to carbon storage.
- Implementing Program AIR-4.o Implement Proposed State Programs to Reduce Greenhouse Gas Emissions. Implement proposed State programs to reduce greenhouse gas emissions, including the Renewable Portfolio Standards, California Fuel Efficiency (CAFE) standards, and carbon cap and trade programs.



- Implementing Program AIR-5.a Coordinate with Local and Regional Agencies. Coordinate with the U.S. Geological Survey, Bay Conservation and Development Commission, California Coastal Commission and other monitoring agencies to study near-term and long-term high probability climate change effects. Explore funding and collaborations with Bay Area partners in the Cities for Climate Protection Campaign in order to share resources, achieve economies of scale, and develop plans and programs that are optimized to address climate change on a regional scale.
- Implementing Program AIR-5.b Study the Effect of Climate Change. Determine how climate change will affect the following:
  - Natural Systems: Changes in water availability, shifting fog regimes (and the effect on coastal redwoods and fire ecology), temperature changes, and shifting seasons.
  - Biological Resources: Changes in species distribution and abundance in estuary ecosystems resulting from salinity changes and flooding. For marine ecosystems, determine changes in distribution and abundance resulting from warmer waters, rising sea level, and changes in ocean currents and freshwater inflows.
  - Environmental Hazards: Runoff, fire hazards, floods, landslides and soil erosion, and the impact on coastal and urban infrastructure.
  - Built Environment: Effect of flooding and rising sea level on sewage systems, property, and infrastructure.
  - Water Resources: Runoff, changes in precipitation, increases and decreases in drought, salinity changes, sea level rise, and shifting seasons.
  - Agricultural and Food Systems: Food supply, economic impacts, and effect on grazing lands.
  - Public Health: Temperature-related health effects, air quality impacts, extreme weather events, and vector-, rodent-, water-, and food-borne diseases.

### **Built Environment Element – Energy and Green Building policies**

- Policy EN-1.1 Adopt Energy Efficiency Standards. Integrate energy efficiency and conservation requirements that exceed State standards into the development review and building permit process
- Implementing Program EN1.a Establish a Permanent Sustainable Energy Planning Process. Integrate sustainable energy resource planning and program implementation (including climate protection, water resources, and other overlapping topics) into long-range and current planning functions and other related County divisions. Establish and maintain a process to implement, evaluate, and modify existing programs. Work with PG&E and local and State agencies to estimate current and future energy demand countywide, conduct integrated resource planning, determine how energy sources and delivery systems can conserve resources and reduce demand in Marin, and promote energy conservation, efficiency, and use of renewable resources.

## 10. Greenhouse Gas Emissions and Energy

- Implementing Program EN-1.b Adopt Energy Efficiency Standards for New and Remodeled Buildings. Develop and implement building standards that exceed Title 24 for residential and commercial buildings based on appropriate criteria for the county’s specific climate zones, sustainability goals, and other appropriate criteria. Establish technical and financial feasibility criteria by which the standards can be periodically improved.
- Policy EN-1.2 Offer Effective Incentives. Continue to offer incentives such as expedited permit processing, reduced fees, and technical assistance to encourage energy efficiency technology and practices.
- Policy EN-1.3 Provide Public Information and Education. Continue to provide information, marketing, training, and education to support energy efficiency and energy conservation.
- Policy EN-1.4 Reduce Energy Use in County Facilities. Continue to integrate energy efficiency and conservation into all County functions.
- Policy EN-2.2 Adopt Renewable Energy Building Standards. Integrate technically and financially feasible renewable energy requirements into development and building standards.
- Policy EN-2.3 Promote Renewable Energy. Facilitate renewable energy technologies through streamlined planning and development rules, codes, processing, and other incentives.
- Policy EN-3.1 Initiate Green Building Initiatives. Encourage and over time increasingly require sustainable resource use and construction with nontoxic materials.
- Implementing Program EN-3.a Require Green Building Practices for Residential Development. Require residential development and major remodels that are subject to design review to utilize the Marin Green Building Design Guidelines (see the Introduction, “Technical Background Reports and Other Supporting Documents”) or other County-approved rating systems. Affordable housing projects are encouraged but not required to integrate the Marin Green Building Design Guidelines or other County-approved rating systems. Additional technical assistance and public funding should be provided for that purpose.
- Implementing Program EN-3.f Facilitate Green Building Practices. Continue to identify and remove regulatory or procedural barriers to implementing green building practices in Marin, such as updating codes, guidelines, and zoning.
- Implementing Program EN-3.k Evaluate Carbon Neutral Building Incentives. Evaluate the feasibility of incentives and regulations to achieve carbon neutral buildings.

**Marin County Green Building Requirements**

Marin County adopted the 2019 edition of the California Green Building Standards Code, with local amendments in Municipal Code Section 19.04.115. The Marin County Green Building Requirements went into effect January 2020. The Marin County Code, 19.04.140 – Standards for Compliance, contains the compliance thresholds for the Green Building Requirements listed in Table 10-5.

**Table 10-5:  
Marin County Green Building Requirements for Residential Development by Size**

<b>Project Type and Size</b>	<b>Green Building Requirements</b>	<b>Energy Efficiency Requirements</b>	<b>Electric Vehicle Requirements</b>
Single and Two-Family New Construction	CALGreen Tier 1	<p>"All-electric", meeting the requirements outlined for the project in the 2019 Building Energy Efficiency Standards</p> <p>OR</p> <p>"Limited mixed-fuel", prewired for future induction cooking, with an Efficiency EDR Compliance Margin of 3, demonstrated on Title 24 energy reports</p> <p>OR</p> <p>"Mixed-fuel", prewired for future induction cooking, with an Efficiency EDR Compliance Margin of 3 and a Total EDR Compliance Margin of 10, demonstrated on Title 24 energy reports.</p> <p>See Marin County Code Section 19.04.130 for applicable definition of "All-electric", "Limited mixed-fuel", and "Mixed-fuel".</p>	Comply with CALGreen Measure A4.106.8.1: Tier 1 and Tier 2. For each dwelling unit, a dedicated 208/240-volt branch circuit shall be installed in the raceway required by Section 4.106.4.1. The branch circuit and associated overcurrent protective device shall be rated at 40 amperes minimum.
Single and Two-Family Additions and Alterations less than 1,200 square feet	CALGreen Mandatory	Meet the standards outlined for the project in the 2019 Building Energy Efficiency Standards	If the project is upgrading the main electrical service panel, comply with CALGreen Measure A4.106.8.1: Tier 1 and Tier 2. For each dwelling unit, a dedicated 208/240-volt branch circuit shall be installed in the raceway required by Section 4.106.4.1.
Single and Two-Family Additions and Alterations 1,200 square	CALGreen Tier 1 less section A4.2 (Energy Efficiency)	Meet the standards outlined for the project in the 2019 Building Energy Efficiency Standards	The branch circuit and associated overcurrent protective device shall be rated at 40 amperes minimum.

**Table 10-5:  
 Marin County Green Building Requirements for Residential Development by Size**

<b>Project Type and Size</b>	<b>Green Building Requirements</b>	<b>Energy Efficiency Requirements</b>	<b>Electric Vehicle Requirements</b>
feet or greater			
Multifamily New Construction 3 stories or less	CALGreen Tier 1	"All-electric", meeting the requirements outlined for the project in the 2019 Building Energy Efficiency Standards  OR  "Limited mixed-fuel", prewired for future induction cooking, with an Efficiency EDR Compliance Margin of 0.5, demonstrated on Title 24 energy reports  OR  "Mixed-fuel", prewired for future induction cooking, with an Efficiency EDR Compliance Margin of 0.5 and a Total EDR Compliance Margin of 10, demonstrated on Title 24 energy reports.  See Marin County Code Section 19.04.130 for applicable definition of "All-electric", "Limited mixed-fuel", and "Mixed-fuel".	Build one EV charging space <sup>(A)</sup> per dwelling unit, as defined in Chapter 22.130.030 of Marin County Code, complying with technical requirements referenced in A4.106.8.2.1
Multifamily New Construction 4 stories or greater		"All-electric", meeting the requirements outlined for the project in the 2019 Building Energy Efficiency Standards  OR  "Limited mixed-fuel", prewired for future induction cooking, with a compliance margin of 5%, demonstrated on Title 24 energy reports	

**Table 10-5:  
Marin County Green Building Requirements for Residential Development by Size**

Project Type and Size	Green Building Requirements	Energy Efficiency Requirements	Electric Vehicle Requirements
		OR  "Mixed-fuel", prewired for future induction cooking, with a compliance margin of 10%, demonstrated on Title 24 energy reports. See Section 19.04.130 for applicable definition of "All-electric", "Limited mixed-fuel", and "Mixed-fuel".	
Multifamily Additions and Alterations less than 1,200 square feet	CALGreen Mandatory	Meet the standards outlined for the project in the 2019 Building Energy Efficiency Standards	If the service panel is modified, add designated electrical capacity for 20% of onsite parking spaces to be EV Capable. <sup>(A)</sup> When parking lot surface is modified (paving material and curbing removed), add conduit to all exposed parking spaces. Where existing electrical service will not be upgraded in the existing project scope, designate capacity for parking spaces to the maximum extent that does not require an upgrade to existing electrical service.
Multifamily Additions and Alterations 1,200 square feet or greater	CALGreen Tier 1 less section A4.2 (Energy Efficiency)	Meet the standards outlined for the project in the 2019 Building Energy Efficiency Standards	

A. Electrical service capacity shall be able to deliver a minimum 40 amperes at 208 or 240 volts multiplied by 20% of the total number of EV Spaces. The panelboard(s) shall have sufficient space to install a minimum of one 40-ampere dedicated branch circuit and overcurrent protective device per EV Space up to a minimum of 20% of the total number of EV Spaces. The circuits and overcurrent protective devices shall remain reserved exclusively for EV charging. An EV Load management system may be necessary in order to provide EV charging at more than 20% of EV Spaces.

Marin County is currently in the process of updating the Green Building Model Reach Code. Marin County is expecting to publish a draft by September 2022 and adopt the updates in November 2022.

**Marin County Unincorporated Area Climate Action Plan 2030**

In 2006, Marin County adopted a GHG reduction Plan which established a goal to reduce emissions 15% below 1990 levels by 2020. Then in 2015, Marin County prepared a Climate

Action Plan with a goal of reducing emissions 30% by 1990 levels by 2020. In December 2020, Marin County adopted the Marin County Unincorporated Area Climate Action Plan 2030 (2030 CAP).

The 2030 CAP established several GHG emissions reduction goals, including reducing emissions 40% below 1990 levels with mitigation alone, 60% below 2005 levels using a combination of mitigation and sequestration by 2030, and of achieving carbon neutrality by 2045.<sup>14</sup> Table 10-6 below summarizes these goals.

In order to achieve this goal, the 2030 CAP identified quantifiable GHG emission reduction measures under the following categories:

- Low Carbon Transportation
- Renewable Energy and Electrification
- Energy Efficiency
- Waste Reduction
- Water Conservation
- Agriculture and Working Lands – Mitigation
- Agriculture and Working Lands – Sequestration

The 2030 CAP also contains strategies that address consumption-based emissions and supporting community adaptation and engagement; however, no emissions quantifications were taken for these categories of CAP measures.

**Table 10-6:  
 2030 Climate Action Plan GHG Emission Reduction Targets**

<b>Metric Evaluated</b>	<b>2030 Mitigation Only Target</b>	<b>2030 Mitigation + Sequestration Target</b>	<b>2045</b>
GHG Reduction Target	40% below 1990 Levels	60% below 2005 Levels	Carbon Neutral
Emissions Limit to Meet Target (MTCO <sub>2e</sub> )	251,779	197,474	0
Reference	SB 32 Statewide Target	Drawdown Marin	Drawdown Marin
Measures Required to Achieve Target	Mitigation Only	Mitigation Plus Sequestration	Mitigation Plus Sequestration

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<sup>14</sup>GHG reduction goals are based on the goals of Drawdown: Marin, a program launched by the County Board of Supervisors in 2017 that in 2018 began a two-year long community-wide planning process for reducing GHG emissions, addressing equity, and increasing community resilience. The Drawdown: Marin Strategic Plan was published in 2020. The Strategic Plan set Marin’s GHG reduction goals that were used in the 2030 CAP and included 29 climate solutions, seven of which the 2030 CAP endorsed for immediate implementation.

**Table 10-6:  
2030 Climate Action Plan GHG Emission Reduction Targets**

Metric Evaluated	2030 Mitigation Only Target	2030 Mitigation + Sequestration Target	2045
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Source: Marin County, 2020

**10.3 IMPACTS AND MITIGATION MEASURES**

This section describes potential impacts related to GHG emissions and energy that could result from the proposed Project, and discusses components of the Project that would avoid or reduce those potential impacts. Where applicable, this analysis refers directly to the Housing Element Update or the Safety Element Update if the analysis/evaluation is relevant to only one component. The section also recommends mitigation as needed to reduce potentially significant impacts to less-than-significant levels.

**10.3.1 Thresholds of Significance**

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to greenhouse gas emissions and energy if it would:

- A. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment;
- B. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases;
- C. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
- D. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

The BAAQMD provides guidance on assessing and mitigating GHG emissions impacts. In April 2022, the BAAQMD adopted new CEQA thresholds for evaluating climate impacts from land use projects and plans (BAAQMD 2022). As described in Section 6.3.3, the proposed Project is a planning-level document that would authorize future development; however, the project-specific details of these future development proposals are not currently known and therefore impacts associated with the proposed Project are analyzed using the BAAQMD’s plan-level guidance. Future development projects supported by the proposed Project would be analyzed using the project-level guidance contained in BAAQMD’s CEQA Air Quality Guidelines. This guidance informs the evaluation of GHG emissions impacts presented below. The BAAQMD’s plan- and project-level thresholds of significance are summarized in Table 10-7 and Table 10-8, respectively. The project-level thresholds are provided for information purposes only.

**Table 10-7:  
 BAAQMD Plan-Level GHG Thresholds of Significance**

Pollutant	Plan-Level Thresholds of Significance for Operations	
	Option A	Option B
GHG	Meet the State’s goals to reduce emissions to 40 percent below 1990 levels by 2030 and carbon neutrality by 2045; or	Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Source: BAAQMD 2022

As described in Section 10.2.4, the County adopted its 2030 CAP in December of 2020, which contains the County’s strategy and the measures it will undertake to reduce its GHG emissions in line with State goals by 2030 (through mitigation alone) and Drawdown Main by 2030 (through mitigation and sequestration efforts). Although the measures identified in the 2030 CAP are specifically designed to achieve the County’s 2030 GHG emission reduction goals, the actions identified in the 2030 CAP would also put the County on track to meet its 2045 GHG emission reduction goal of becoming carbon neutral.<sup>15</sup> Because the County’s 2030 CAP is only qualified through 2030, it is not used in this analysis to streamline the review of the proposed Project’s GHG emissions under CEQA (i.e., BAAQMD plan-level GHG Threshold Option B).<sup>16</sup> Instead, BAAQMD plan-level GHG Threshold Option A (i.e., meet the State’s goals to reduce emissions to 40 percent below 1990 levels by 2030 and carbon neutrality by 2045) is used to assess the significance of the proposed Project’s GHG emissions. The information contained in the 2030 CAP is still pertinent and applicable to the discussion at hand, however, and is used to help determine the significance of the proposed Project’s GHG emissions.

The planning horizon year of analysis for this EIR is 2040, which coincides with neither the 2030 nor 2045 GHG emission reduction goals identified in the 2030 CAP. Thus, a linear extrapolation was carried out for this EIR for the Year 2040 based on the County’s 2030 and 2045 goals to determine the emissions levels the County would need to achieve to put it on track for meeting its 2045 goal. These interim targets, which are used to help determine the significance of the proposed Project’s GHG emissions, are presented in Table 10-9. In addition to using the 2040 GHG emissions reduction targets identified in Table 10-9, which are closely tied to consistency with the 2030 CAP, this EIR also utilizes consistency with the CARB 2017 Scoping Plan and ABAG/MTC Plan Bay Area 2050 to determine the significance of the proposed Project’s GHG emissions.

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<sup>15</sup>Although the County’s 2030 CAP identified becoming carbon neutral by 2045 to align its emissions with the goals identified in Drawdown Marin’s, it would also align the County’s 2045 reduction target with that specified in EO B-55-18 and the BAAQMD’s plan-level GHG thresholds (see Option A in Table 10-7).

<sup>16</sup>Although the proposed Project does not use the County’s 2030 CAP for streamlining purposes, it does not preclude the use of future projects authorized by the adoption of the proposed Housing Element Update from using the 2030 CAP for CEQA streamlining purposes.



**Table 10-8  
BAAQMD Project-Level GHG Thresholds of Significance**

Pollutant	Project-Level Thresholds of Significance for Operations	
	Option A	Option B
GHG	Projects must include, at a minimum, the following project design elements: <ol style="list-style-type: none"> <li>1. Project buildings will not include natural gas appliances or natural gas plumbing (in both residential and non-residential projects).</li> <li>2. Project buildings will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA (Public Resources Code Section 21100(b)(3)) and the State CEQA Guidelines (Section 15126.2(b)).</li> <li>3. Project-generated VMT will be reduced below regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally-adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor’s Office of Planning and Research’s Technical Advisory on Evaluating Transportation Impacts in CEQA:                             <ol style="list-style-type: none"> <li>i. Residential projects: 15 percent below the existing VMT per capita.</li> <li>ii. Office projects: 15 percent below the existing VMT per employee.</li> <li>iii. Retail projects: No net increase in existing VMT.</li> </ol> </li> <li>4. The project will comply with the off-street EV requirements in the most recently adopted version of CALGreen Tier 2.</li> </ol>	Be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Source: BAAQMD, 2022

**Table 10-9:  
County 2040 Interpolated GHG Emissions Reduction Targets**

Metric Evaluated	2040 Mitigation Only Target <sup>(A)</sup>	2040 Mitigation + Sequestration Target <sup>(B)</sup>
GHG Reduction Target	80% below 1990 levels	87% below 2005 Levels
Emissions Limit to Meet Target (MTCO <sub>2e</sub> )	83,926	65,825

Source: Marin County 2020

- A. The 83,926 MTCO<sub>2e</sub> mitigation only target for 2040 was developed by taking the County’s mitigation only GHG emissions reduction goal for 2030 (40% below 1990 levels) and determining the percent reduction that would need to occur by 2040 based on the 2030 target and the carbon neutrality target by 2045. Because 2040 is two thirds of way between 2030 and 2045, that value was multiplied through by the remaining reductions that would need to be achieved (i.e., 60%) in order to reach a reduction of 100%. The calculation for this is as follows: 40% + (60% x 2/3) = 80%. The 80% was then multiplied through by the 2030 CAP’s 1990 emission level of 419,632 MTCO<sub>2e</sub> to derive the 83,926 MTCO<sub>2e</sub> mitigation only target for 2040.
- B. The 65,825 MTCO<sub>2e</sub> mitigation plus sequestration target for 2040 was developed by taking the County’s mitigation plus sequestration GHG emissions reduction goal for 2030 (60% below 2005 levels) and determining the percent reduction that would need to occur by 2040 based on the 2030 target and the carbon neutrality target by 2045. Because 2040 is two thirds of way between 2030 and 2045, that value was multiplied through by the remaining reductions that would need to be achieved (i.e., 40%) in order to reach a reduction of 100%. The calculation for this is as follows: 60% + (40% x 2/3) = 89%. The 89% was then multiplied through by the 2030 CAP’s 2005 emission level of 493,685 MTCO<sub>2e</sub> to derive the 65,825 MTCO<sub>2e</sub> mitigation plus sequestration target for 2040.

**10.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts**

Neither the Housing Element Update nor the Safety Element Update contain policies or implementing programs that specifically address greenhouse gas or energy impacts.

### 10.3.3 Impacts and Mitigations

This section describes potential impacts related to greenhouse gas emissions and energy consumption that could result from the proposed Project, and discusses components of the Project that would avoid or reduce those potential impacts. Where applicable, this analysis refers directly to the Housing Element Update or the Safety Element Update if the analysis/evaluation is relevant to only one component. The section also recommends mitigation as needed to reduce potentially significant impacts to less-than-significant levels.<sup>17</sup>

The GHG and energy analyses presented below are based on the construction and operation of 10,993 dwelling units (candidate housing sites), which are more than the 5,214 dwelling units that would be facilitated by adoption of the Housing Element Update (project sites inventory), and the 3,569 dwelling units that are required by the RHNA. The GHG and energy analyses' assumptions, which provide a conservative assessment of potential impacts, are consistent with the land use and transportation modeling assumptions used in the Air Quality Chapter (Chapter 6), Noise Chapter (Chapter 15), and Transportation Chapter (Chapter 18).

**Impact 10-1: Generate Significant Greenhouse Gas Emissions and Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purposes of Reducing Greenhouse Gas Emissions.** [Thresholds of Significance (a) and (b)] The residential housing growth that would be facilitated by the proposed Project would generate GHG emissions in significant quantities and would be inconsistent with the CARB 2017 Scoping Plan, MTC/ABAG Plan Bay Area 2050, and County 2030 CAP. This would be a ***potentially significant impact***.

Future development authorized by approval of the proposed Project would result in construction and operational activities that generate GHG emissions. As described in more detail below, these GHG emissions that would be generated by the housing authorized by adoption of the Housing Element Update would be inconsistent with the BAAQMD-recommended CEQA thresholds of significance, the CARB 2017 Scoping Plan, MTC/ABAG Plan Bay Area 2050, and the County 2030 CAP.

As described at the beginning of this chapter, the proposed Project was evaluated for impacts associated with the construction and operation of up to 10,993 new residential dwelling units throughout the unincorporated portions of Marin County. This number is greater than the number of units contained in the Housing Element Update. Therefore, the evaluation of 10,993 units provides a conservative assessment of potential GHG emissions and impacts.

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<sup>17</sup>The "proposed Project" includes both the Housing Element Update and the Safety Element Update; however, only the land use designations authorized by adoption of the Housing Element Update would have the potential to generate long-term operational GHG emissions. Adoption of both the Housing and Safety Element Updates could result in construction activities and construction-related GHG emissions.

Future development authorized by adoption of the Housing Element Update would result in construction-related GHG emissions. Construction activities generate GHG emissions primarily from fuel combustion in equipment during demolition, site preparation, grading, building construction, paving, and architectural coating activities and in worker, vendor, and haul trips to and from future development projects. Such activities would occur intermittently at different sites in the Project Area over the next approximately 10 to 20 years. The BAAQMD does not maintain thresholds of significance for assessing the significance of construction emissions, noting on page 10 of the Justification Report that GHG emissions from construction are a small portion of a project's lifetime GHGs (BAAQMD 2022). Accordingly, potential construction GHG emissions are not estimated in this EIR.

The residential dwelling units that would be facilitated by adoption of the Housing Element Update would result in operational GHG emissions from the same residential-related sources<sup>18</sup> described in Section 10.1.5. Mobile sources, including vehicle trips to and from land uses within the county, would result primarily in emissions of CO<sub>2</sub>, with emissions of CH<sub>4</sub> and NO<sub>2</sub> also occurring in minor amounts. In addition to mobile sources, GHG emissions would also be generated from natural gas usage, electricity use, water conveyance and use, wastewater treatment, solid waste disposal, and refrigeration technologies. Natural gas use would result in the emission of two GHGs: CH<sub>4</sub> (the major component of natural gas) and CO<sub>2</sub> (from the combustion of natural gas). Electricity use associated with both the physical usage of the development, as well as the energy needed to transport water/wastewater, would result in the production of GHGs if the electricity is generated through non-renewable sources (i.e., combustion of fossil fuels). Solid waste generated by land uses within the county would contribute to GHG emissions in a variety of ways. Landfilling and other methods of disposal use energy when transporting and managing the waste and produce CH<sub>4</sub> from the decomposition of organic materials.

Consistent with the methodology employed to estimate existing (2019) GHG emissions in the Project Area, emissions associated with the proposed land uses designations in the Housing Element Update, in 2040, were estimated using the emissions inventories and forecasts contained in the County 2030 CAP. The following identifies pertinent assumptions and data sources that were used in estimating emissions associated with the proposed Housing Element Update. Unless otherwise noted, emissions factors were held constant between the EIR Inventory and the 2040 EIR forecast.<sup>19</sup>

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<sup>18</sup>Residential-related sources in this context refers to all but the agricultural emissions sources.

<sup>19</sup>For example, the GHG emissions rates for wastewater treatment, solid waste disposal, etc. were held constant. See Appendix C for a full list of emission factors and assumptions.

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- **Land Use Data.** The 2040 EIR forecast is based on 40,811 dwelling units, a population of 90,170, and an employment figure of 18,208 (with 273 of those jobs being associated with agriculture and natural resources).<sup>20, 21</sup>
- **Energy Consumption.** Existing land uses were assumed to continue to consuming electricity and natural gas at the same rate as they did in 2019. The new residential dwelling units were assumed to consume electricity and natural gas consistent with the assumptions contained in the "Projected Residential Development with Title 24 Energy Reduction" table of the 2030 CAP (Marin County 2020; pg. B-55).
- **Embedded GHG Intensity of Electricity.** As with the EIR GHG emissions inventory, the Project Area's land uses in 2040 were assumed to use electricity from PG&E, MCE, and direct access. The 2040 EIR forecast assumed the same percent of electricity would be sourced from each entity, but the weighted emission factor for electricity consumption reflects improvements associated with RPS and supplier-goals. MCE was assumed to supply GHG-free electricity by 2040, while PG&E was assumed to meet the 60% renewable mix required by 2030 under SB 100. The emission factor for direct access electricity was obtained from the 2030 BAU forecast contained in the 2030 CAP.
- **Traffic Model and VMT Estimates.** Consistent with the EIR GHG inventory, the 2040 EIR forecast utilized VMT data generated by Kittelson and Associates using TAMDM. The 2,429,627 daily VMT estimate was annualized using a 347 daily multiplier to obtain an annual VMT estimate of 843,080,569.
- **Mobile Source Emission Factors.** A single mobile source emissions factor was derived using CARB EMFAC2021(v1.0.2) for Marin County in 2040.
- **Off-road Gasoline Sources.** Emissions associated with gasoline combustion from landscaping equipment were omitted from the 2040 EIR forecast. This is to reflect updates to the Small Offroad Engines (SORE) Regulation in late 2021 that will require most newly manufactured small off-road engines, such as those found in leaf blowers, lawn mowers, and other equipment, be zero emission starting in 2024. Gasoline landscaping equipment are anticipated to be phased out by 2040 and replaced by electric-powered counterparts due to the average life of gasoline landscaping equipment.

Table 10-10 below presents the unmitigated GHG emissions estimates of the 2040 EIR forecast and compares them against the EIR inventory.

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<sup>20</sup>The number of agriculture and natural resource jobs were assumed to scale linearly based on the ratio of jobs to agriculture and natural resource jobs accounted for the 2040 BAU forecast of the 2030 CAP.

<sup>21</sup>These metrics for dwelling units, population, and employment in the unincorporated county are correlated with those generated by the TAMDM transportation model and used to generate 2040 Project VMT estimates used in this EIR.

**Table 10-10**  
**Proposed Project Unmitigated 2040 GHG Forecast**

Sector	Metric Tons CO <sub>2</sub> e			
	EIR Inventory (2019)	EIR Forecast (2040)		Net Change
Built Environment – Electricity	25,697	3,079		- 22,618
Built Environment – Natural Gas	94,939	110,157		+ 15,218
Transportation	255,601	228,898		- 26,703
Off-road Vehicles and Equipment	4,263	3,730		- 537
Waste	18,421	23,026		+ 4,605
Water	111	139		+ 28
Wastewater	1,813	2,443		+ 631
Agriculture	121,645	99,277		- 22,502
Total	522,490	470,749		- 51,878
GHG Targets	–	83,926	65,825	–
Targets Exceeded?	–	Yes	Yes	–
Population	66,888	90,170		+23,282
GHG per Capita	7.8	5.2		- 2.6

Source: See Appendix C.

As shown in Table 10-10, the analyzed Project land uses are anticipated generate approximately 470,749 MTCO<sub>2</sub>e annually. While 2040 emissions are an improvement over 2019 existing conditions, they are far more than the 83,926 MTCO<sub>2</sub>e mitigation only target and the 65,825 MTCO<sub>2</sub>e mitigation plus sequestration target. The transportation sector would remain the primary generator of emissions, followed by natural gas from the built environment, and the agriculture sector. As described below, there are several reasons why the unmitigated 2040 EIR forecast emissions are in excess of the targets derived from the 2030 CAP.

- **Transportation Model.** As discussed in Section 10.1.5, there are differences between the transportation models that were used for the 2030 CAP and this EIR. The 2030 CAP's transportation model generated less VMT for the unincorporated county than the EIR's transportation model for the same calendar year (and therefore the 2030 CAP also contains fewer mobile source emissions than the EIR for the same calendar year). This is one of the reasons the GHG estimates prepared for this EIR – the EIR Inventory (2019) and the EIR Forecast (2040) – have larger transportation GHG emissions estimates than the 2030 CAP and the 2019 Standalone Inventory presented in Section 10.1.5.
- **Existing Building Stock.** With the exception of updated emission factors for embedded GHG emissions in electricity consumption and improvements in fuel economy, emissions associated with operation of the existing building stock were held constant. In actuality, it is likely and plausible that some of the existing building stock would be remodeled, retrofitted, or rebuilt, which would help reduce GHG emissions by improving the energy efficiency of the buildings people work and live in. It is unclear, however, to what extent this would occur and therefore as a conservative practice consumption (e.g., energy and water) and production (e.g., wastewater and solid waste) were held constant.
- **Project Growth.** The proposed Project was assessed for the addition of approximately 10,993 additional dwelling units compared to 2019 conditions. As described at the

beginning of this chapter, and in Section 10.3.3, the 10,993 additional dwelling units assumed in this analysis exceeds both the number of units provided for by the land use designations contained in the Housing Element Update and the number required by the RHNA. As such, the GHG emissions estimates for Project conditions in 2040 and the analysis contained within this chapter provide a conservative assessment of potential GHG impacts. In addition, both the EIR Inventory (2019) and 2040 EIR Forecast reflect a greater number of dwelling units, population, and jobs than were located within the unincorporated County in 1990 and 2005 (i.e., the years on which the GHG targets are based; see Table 10-8) due to growth that has occurred over the last approximately 30 and 15 years, respectively. These additional, existing land uses in the unincorporated community compared to historical conditions in 2005 and 1990 reflect additional people and sources (e.g., buildings) that have the potential to generate GHG emissions.

As described above, there are several factors contributing to the reason why the 2040 EIR Forecast has emissions that exceed the 2040 GHG targets (i.e., the level that would demonstrate progress toward meeting the BAAQMD plan-level threshold of carbon neutrality by 2045).

The County has several existing planning documents that encourage energy efficiency and a reduction in GHG emissions, such as the 2007 CWP and the 2030 CAP. For example, 2007 CWP Program AIR-4.a specifies that the County will implement energy efficiency programs and use renewable energy. Table 10-5 presents the requirements of the County's Green Building Code, which generally require new residential development meet the energy efficiency standards provided for in the Tier I voluntary CalGreen Code standards. The County's Green Building Code requirements provide options for achieving the Code's energy efficiency goals and advancing energy efficiency in the County, such as having new residential development be all electric. Alternatively, new residential development may elect to have mixed-fuel, but the building also has to be constructed such that the kitchen is prewired to support induction cooking in the future. 2007 CWP Program AIR-4.h also sets forth policy requirements that proposed developments must include a carbon emissions assessment. Future projects authorized by the land uses in the proposed Housing Element Update would be required to comply with existing 2007 CWP policies and programs, such as Program AIR-4.a and AIR-4.h, as well as the County's Green Building Code, which would serve to reduce GHG emission associated with new development.

Despite the existence and implementation of existing policies, programs, and code requirements adopted by the County for the purposes of reducing GHG emissions, the GHG emissions associated with the proposed Project would continue to exceed the derived 2040 GHG targets and would be potentially significant. Mitigation the County would implement to reduce GHG emissions is presented following the discussion, below, of Project consistency with plans, policies, and regulations that have been adopted for the purposes of reducing GHG emissions.

### **CARB 2017 Climate Change Scoping Plan**

As discussed in Section 10.2.2, the 2017 Climate Change Scoping Plan is CARB's primary document used to ensure State GHG reduction goals are met. The plan identifies an increasing need for coordination among State, regional, and local governments to achieve the GHG emissions reductions that can be gained from local land use planning and decisions. The major

elements of the 2017 Climate Change Scoping Plan, which are designed to achieve the State's 2030 GHG reduction goal, are listed in Section 10.2.2. Nearly all of the specific measures identified in the 2017 Climate Change Scoping Plan will be implemented at the state level, with CARB and/or another state or regional agency having the primary responsibility for achieving required GHG reductions. The Project, therefore, would have limited ability to directly conflict with any of the specific measures identified in the 2017 Climate Change Scoping Plan. Nonetheless, the overarching goal of the 2017 Climate Change Scoping Plan is to achieve a 40 percent reduction in GHG emissions below 1990 levels by the Year 2030. To achieve this statewide goal, the 2017 Climate Change Scoping Plan recommends a statewide efficiency metric of 6.0 MTCO<sub>2</sub>e/yr/capita by 2030 and 2.0 MTCO<sub>2</sub>e/yr/capita by 2050. These statewide per capita targets are based on the statewide GHG emissions inventory that includes all emissions sectors in the State. As shown in Table 10-9, year 2040 GHG emissions estimates associated with the Project would result in a GHG efficiency of 5.2 MTCO<sub>2</sub>e/yr/capita. This value exceeds the 2017 Climate Change Scoping Plan adjusted statewide of 4.0 MTCO<sub>2</sub>e/yr/capita that would apply to Year 2040 conditions.<sup>22</sup> To meet the interpolated CARB Scoping Plan efficiency target of 4.0 MTCO<sub>2</sub>e/yr/capita, the County would need to reduce its 2040 GHG emissions presented in Table 10-9 by approximately 31 percent, or 110,067 MTCO<sub>2</sub>e/year. The proposed Project would, therefore, conflict with implementation of the 2017 Climate Change Scoping Plan. This would be a ***potentially significant impact***.

### **Plan Bay Area 2050**

As described in Section 10.2.2, Plan Bay Area 2050 is a long-range planning document developed by ABAG and MTC to reduce GHG emissions from transportation. Plan Bay Area 2050 aims to reduce 2035 per capita GHG emissions from cars and light-duty trucks by 20 percent compared to a 2005 baseline. There is currently no data that would provide an apples-to-apples comparison of 2005 mobile source emissions to 2040 mobile source emissions due to the differences in traffic models previously discussed; however, a comparison of the EIR Inventory's mobile source per capita GHG emissions against the 2040 EIR Forecast's per capita GHG emissions indicates that mobile source emissions would have improved by approximately 33.6 percent.<sup>23</sup> Most of this reduction in mobile source emissions would be due to improvements in fuel efficiency and other State and federal requirements that cannot be credited towards Plan Bay Area per capita GHG emissions reductions requirements.

While overall fuel economy is expected to increase, and per capita GHG emissions expected to decrease, the proposed Project could still conflict with the goals of Plan Bay Area 2050, because the Project would have a significant VMT impact (see Impact 18-4) and would generate VMT at a greater rate than population would increase (see Impact 6-1 and Table 10-8). Overall,

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<sup>22</sup>The 4.0 MTCO<sub>2</sub>e/yr/capita metric is linearly derived from the Scoping Plan's identified metrics of 6.0 MTCO<sub>2</sub>e/yr/capita in Year 2030 and 2.0 MTCO<sub>2</sub>e/yr/capita in Year 2050.

<sup>23</sup>As shown in Table 10-9, the EIR Inventory and 2040 EIR Forecast would have mobile source emissions of 255,601 MTCO<sub>2</sub>e and 228,898 MTCO<sub>2</sub>e, respectively. Dividing them by the population estimates of 66,888 and 90,170, respectively yields a GHG per capita GHG rate of 3.8 MTCO<sub>2</sub>e per capita for 2019 and 2.5 MTCO<sub>2</sub>e per capita for 2040. Dividing 2.5 MTCO<sub>2</sub>e per capita by 3.8 MTCO<sub>2</sub>e per capita yields an approximately 33.6 percent reduction in per capita mobile source emissions.

the VMT analysis indicates the proposed Project would not reduce VMT/resident. Therefore, it is possible that the implementation of the Project could impede the ability to meet regional transportation GHG reduction goals established by Plan Bay Area 2050. This would be a ***potentially significant impact***.

### **County 2030 CAP**

As described in Section 10.2.2, the County adopted its 2030 CAP in December 2020 that established the County's strategy for reducing GHG emissions from the unincorporated county through 2030 and beyond. The 2030 CAP sets forth GHG reduction targets to align unincorporated county emissions with SB 32 for 2030 and Drawdown Marin for 2030 and 2045. The land use designations analyzed in this analysis exceed the number of housing units assessed in the 2030 CAP's 2040 BAU forecast by approximately 12,386 units. The additional housing units and population analyzed for the Housing Element Update would increase emissions from electricity and natural gas consumption, mobile source emissions, and the other emission sectors aside from agriculture listed in Table 10-9. The land use designations in the Housing Element Update also identify several, large, undeveloped sites as future housing sites that have the potential to sequester a notable amount of carbon.<sup>24</sup> Individually, the loss of sequestration at these sites may not be considerable, but collectively they may be, and impede the 2030 CAP's ability to meet its sequestration goal. Given the strong emphasis on carbon sequestration in the 2030 CAP, changes in land use such as those proposed by the land uses designations in the Housing Element Update could conflict with the current strategy for reducing GHG emissions identified in the 2030 CAP.

Many of the existing measures and implementing actions contained in the 2030 CAP would have beneficial and appreciable GHG reduction benefits for the residential units that would be facilitated by adoption of the Housing Element Update. This is further explained in the "Conclusion" section of this impact. However, the growth facilitated by adoption of the Housing Element Update is greater than the amount of growth assumed in the 2030 CAP. Therefore, the proposed Project would conflict with the 2030 CAP. This is would be a ***potentially significant impact***.

### **Conclusion**

As discussed above, development of the new residential units facilitated by adoption of the Housing Element Update would generate GHG emissions that would have the potential to exceed the 2040 GHG emissions reduction targets derived from the 2030 CAP and, therefore, would not put the County on track for achieving the BAAQMD plan-level threshold of being carbon neutral by 2045. The growth facilitated by adoption of the Housing Element Update would also result in GHG emissions that would conflict with the CARB 2017 Scoping Plan, MTC/ABAG Plan Bay Area 2050, and County 2030 CAP.

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<sup>24</sup>For example, Buck Center site is primarily herbaceous and native forest land use cover, Atherton Corridor is primarily herbaceous land use cover, and St. Vincent's/Silveira is herbaceous, intensively managed hayfield, native and non-native shrub, and native forest land use cover.



Therefore, the County would implement Mitigation Measures 10-1A through 10-1C to reduce GHG emissions associated with future development facilitated by adoption of the Housing Element Update. These measures would reduce GHG emissions from transportation and building energy use, two of the largest sources of potential GHG emissions associated with the additional land uses contained in the Housing Element Update.

Mitigation Measure 10-1A would require the County to expedite its implementation of 2030 CAP Strategy EE-C4 and include a prohibition of natural gas in new residential development in the next update of its Green Building Code. Mitigation Measure 10-1B would further the existing requirements of the County's Green Building Code, by requiring new development to include bicycle parking in excess of that required by the mandatory CalGreen Code (base) standards. Mitigation Measure 10-1B in conjunction with the County's existing requirements for Tier I and Tier II EV charging infrastructure in new development would serve to reduce the number of fossil-fuel powered vehicles on roadways in the County and the associated GHG emission generated from mobile sources. Mitigation Measure 10-1C requires the County to implement Mitigation Measure 18-4 as a means to also reduce GHG emissions. Mitigation Measure 10-1C would require site specific evaluation of a project's VMT and require it to reduce VMT (and the GHG mobile source emission associated with it).

Quantifying the specific GHG emissions reductions associated with implementation of Mitigation Measures 10-1B and 10-1C is not possible for several reasons. First, the GHG emissions reduction of Mitigation Measure 10-B would be dependent on the locations of each housing site that is developed, the bicycle infrastructure (e.g., bike lanes) in the general vicinity of the housing site, amenities in proximity to the housing site, and the nature of the dwelling unit's future tenants or owners. Second, as discussed in greater detail in Chapter 18, Transportation, implementation of Mitigation Measure 10-1C would reduce VMT from new residential development facilitated by adoption of the Housing Element Update; however, it is not known to what extent it would be able to be applied uniformly and effectively for all future project facilitated under implementation of the proposed Project.

While it is not possible to quantify the GHG emission reductions associated with Mitigation Measures 10-B and 10-C at this time, the County's 2030 CAP identifies numerous strategies that would support GHG emissions reductions from Mitigation Measures 10-B and 10-C and facilitate further GHG emissions reductions through supporting measures undertaken by the County. A qualitative discussion of the 2030 CAP strategies being implemented by the County that would continue to support GHG emissions reductions from the residential growth facilitated by adoption of the Housing Element is provided below. The quantified GHG emissions reductions that would be achieved from implementation of Mitigation Measure 10-1A are provided in Table 10-10 following the 2030 CAP discussion.

- **LCT-C1: Zero Emission Vehicles.** The County is in the process of undertaking numerous actions to support the expanded use of EVs throughout the county. For example, the second action items of LCT-C1 indicates the County will support the development of a countywide EV plan that can be adopted by the County and all other Marin jurisdictions that accelerates EV adoption. In addition, the seventh action item specifies that the County will continue to require new and remodeled single- and multifamily projects install EV charging infrastructure, as specified in the County's Green Building Ordinance. New development facilitated by adoption of the Housing Element Update would also benefit

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from other actions, such as requiring new and remodeled gas stations provide EV fast chargers and/or hydrogen fueling stations.

- **LCT-C2: Biking and Micromobility.** The County will promote bicycling and micromobility (e.g., e-bikes, scooters, etc.) and maintain bicycles facilities consistent with the Marin County's Unincorporated Area Bicycles and Pedestrian Master Plan and "complete streets" policies. Providing a connected and comprehensive network of bike lanes and routes encourages the use of these facilities (and supports GHG emissions reductions from Mitigation Measures 10-B and 10-C).
- **LCT-C3: Walking.** Also provides that the County will establish and maintain a system of pedestrian facilities consistent with the Marin County's Unincorporated Area Bicycles and Pedestrian Master Plan and "complete streets" policies. Similar to bike lanes, having a network of sidewalks and other pedestrian facilities would promote new residents using this form of non-vehicular transportation. This measure would also support the GHG emissions reductions from Mitigation Measure 10-1C.
- **LCT-C4: Safe Routes to School.** This strategy would support GHG emissions reductions by encouraging non-vehicular modes of transportation and zero emission vehicles as a means for new young county residents to get to and from school. This measure would also support the GHG emissions reductions from Mitigation Measure 10-1C.
- **LCT-C5: Public Transit.** In conjunction with LCT-C2 and LCT-C3, the use of public transit allows residents to travel further distances without the use of vehicles. Working with transit providers to increase access would be beneficial to new residents and continues to support the transition away from fossil fuel-powered vehicles (LCT-5 also calls for supporting a transition to renewable diesel / electric buses). This measure would also support the GHG emissions reductions from Mitigation Measure 10-1C.
- **LCT-C6: SMART Train.** In conjunction with LCT-C2 and LCT-C3, continue connecting county residents to the SMART Train via bicycle and pedestrian facilities. Also work with transit providers to address the last mile connection between the SMART Train and rider's destinations. This measure would also support the GHG emissions reductions from Mitigation Measure 10-1C.
- **RE-C2: GHG-Free Electricity.** The County is encouraging residents to switch to 100% renewable electricity (MCE Deep Green, MCE Local Sol, and PG&E Solar Choice). New residential development facilitated by adoption of the Housing Element Update would be subject to Mitigation Measure 10-1A, which would prohibit natural gas in those development. Residents who also make sure of 100% renewable electricity would essentially reduce GHG emissions associated with operation of their residence to zero.
- **EE-C3: Cool Pavement and Roofs.** Future development in the unincorporated county may be subject to County-specific requirements for using reflective, high albedo material for roadways, parking lots, and sidewalks and cool roofs to reduce the urban heat island effect and save energy. For new residential development not utilizing 100% renewable electricity (see 2030 CAP Strategy RE-C2) this would help reduce the amount of electricity needed to heat / cool their building.

- **EE-C4: Green Building Code.** This strategy calls for the prohibition of natural gas end uses in new residential buildings in the County’s green building ordinance that aligns with the 2022 California Building Standards code update. As discussed previously, Mitigation Measure 10-1A expedites this 2030 CAP strategy and immediately requires new residential development facilitated by adoption of the Housing Element Update be all-electric.
- **WR-C2: Residential Organic Waste.** The County is working with Zero Waste Marin, the County’s waste haulers and special districts, and other organizations to educate and motivate residents to utilize curbside collection services and home composting for food waste. New residents would benefit from the outreach and engagement being undertaken under this 2030 CAP strategy.
- **WR-C4: Mandatory Waste Diversion.** New residential development facilitated by adoption of the Housing Element Update would be required to comply with County requirements for waste diversion. Allocating waste, recycling, and organics to the proper locations at waste management facilities helps reduce methane emissions from landfilling and the reuse of materials.
- **WC-C1: Community Water Use.** New residents would benefit from outreach and educational opportunities provided by the County regarding water conservation programs and incentives. New residential developments would also reduce GHG emissions from outdoor water use if greywater systems are installed and used.

As described above, the County has numerous strategies it is currently implementing through its 2030 CAP that would have appreciable benefits for the new residential development facilitated by adoption of the Housing Element Update.

Mitigation Measure 10-1A would be able to be applied uniformly across all new residential development facilitated by adoption of the Housing Element Update. The GHG emissions reductions associated with the implementation of Mitigation Measure 10-1A have been quantified, and the mitigated emissions estimates for the 2040 EIR Forecast are presented in Table 10-11.

**Table 10-11  
Proposed Project Mitigated 2040 GHG Forecast**

Sector	Metric Tons CO <sub>2</sub> e			
	EIR Inventory (2019)	EIR Forecast (2040)		
			Net Change	
Built Environment – Electricity	25,697	3,079		- 22,618
Built Environment – Natural Gas	94,939	93,178		- 1,760
Transportation	255,601	228,898		- 26,703
Off-road Vehicles and Equipment	4,267	3,730		- 537
Waste	18,421	23,026		+ 4,605
Water	111	139		+ 28
Wastewater	1,813	2,443		+ 631
Agriculture	122,371	99,869		- 22,502
Total	523,220	454,363		- 68,856
GHG Targets	–	83,926	65,825	–
Targets Exceeded?	–	Yes	Yes	–

**Table 10-11  
 Proposed Project Mitigated 2040 GHG Forecast**

Sector	Metric Tons CO <sub>2</sub> e		
	EIR Inventory (2019)	EIR Forecast (2040)	Net Change
Population	66,888	90,170	+23,282
GHG per Capita	7.8	4.2	- 3.6

Source: See Appendix C.

As shown in Table 10-11, implementation of Mitigation Measure 10-1A would reduce the 2040 EIR Forecast GHG emission estimates to 454,363 MTCO<sub>2</sub>e/yr, which would be approximately 16,979 MTCO<sub>2</sub>e/yr less than the unmitigated 2040 EIR Forecast’s emissions, but still far greater than the 83,926 MTCO<sub>2</sub>e mitigation-only target of the 65,825 MTCO<sub>2</sub>e mitigation plus sequestration target. The mitigated GHG per capita rate of 4.2 MTCO<sub>2</sub>e/yr/SP would also continue to exceed the CARB 2017 Scoping Plan interpolated GHG efficiency target of 4.0 MTCO<sub>2</sub>e per capita. Despite the implementation of Mitigation Measures 10-1A through 10-1C this impact would be **significant and unavoidable**.

**Mitigation Measure 10-1A: Prohibit Natural Gas Plumbing and Appliances in New Housing Sites.**

The County’s 2022 Green Building Model Reach Code that is under development shall include provision(s) that prohibit natural gas plumbing and the use of natural gas appliances such as cook tops, water heaters, and space heaters in all new housing site developments unless the applicant can show an all-electric building design is not feasible due to specific economic, technical, logistical, or other factors associated with the development site. All new housing sites shall be required to comply with the aforementioned natural gas prohibition requirements prior to the adoption of the County’s 2022 Green Building Model Reach Code.

**Mitigation Measure 10-1B: Residential Bicycle Parking Requirements.**

The County shall require new residential housing sites to comply with the Tier II bicycle parking requirements contained in the latest editions of the California Green Building Standards Code (CalGreen) in effect at the time the building permit application is submitted to the County. Currently, the 2019 CalGreen Code Section A4.106.9, Bicycle Parking, requires new multi-family buildings provide on-site bicycle parking for at least one bicycle per every two dwelling units, with acceptable parking facilities conveniently reached from the street.

**Mitigation Measure 10-1C: Reduce VMT from New Residential Development.** Implement Mitigation Measure 18-4 (Transportation).

**Mitigation Measure 18-4.** Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, OPR, 2018 (or subsequent updates), or future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments. For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a major role in most cases. Following are TDM and other strategies that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.

- Subsidize resident transit passes
- Provide or participate in established ride-matching program(s)
- Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator
- Complete bus stop improvements or on-site mobility hubs
- Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit
- Subsidize resident transit passes
- Provide or participate in established ride-matching program(s)
- Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator
- Complete bus stop improvements or on-site mobility hubs

**(continued)**

**Mitigation Measure 10-1C (continued):**

- Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit
- Reduce parking supply at affordable or senior projects and projects that are well-served by transit
- Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present
- Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)
- Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.

Even with implementation of these mitigation measure, this impact would remain ***significant and unavoidable***.

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**Impact 10-2: Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources.**

[Threshold of Significance (c)] Implementation of the proposed Project would increase the need for electricity and natural gas within the County and gasoline and diesel consumption in the region during construction and operation of new land use developments.

**Electricity**

*Construction Use.* Temporary electric power would be required at various construction sites throughout the county as growth occurs under the proposed Project. Electricity would be consumed by lighting and electronic equipment (e.g., computers) located in trailers used by construction crews, and by small, off-road equipment (e.g., compressors) used during development activities. However, the electricity used for such activities would be temporary and would have a negligible contribution to the overall energy consumption in the county.

*Operational Use.* Development facilitated by the adoption of the Housing Element Update would require electricity for multiple uses, including, but not limited to: building heating and cooling, lighting, appliance use (e.g., washer, dryer, microwave, etc.), and other electronics (e.g., televisions). In addition, electricity use would increase with greater adoption and reliance on EVs. As described under Impact 10-1, consumption rates derived from the County's 2030 CAP were used to estimate GHG emission from building energy use. Table 10-12 summarizes changes in electricity consumption that would occur in the Planning Area over the next approximately 20 years under adoption of the Housing Element Update.

**Table 10-12:  
Proposed Project Electricity Consumption Estimates**

Metric	Electricity Consumption (MWh)		
	Existing (2019)	Project (2040) (A)	Net Change
Electricity Consumption	329,158	328,873	- 285
Service Population (SP)	86,705	108,379	+ 21,674
Electricity Consumption Efficiency (MWh/yr/SP)	3.80	3.03	- 0.76

Source: MIG, 2022 (see Appendix C).

- A. The electricity estimates for the Project in 2040 do not reflect the additional electricity demand that would be required for new residential buildings per Mitigation Measure 10-1A to offset the energy that otherwise would have been supplied by natural gas. The use of this additional electricity would not be wasteful, inefficient, or unnecessary nor would it be significant because it would come from primarily renewable sources as opposed to natural gas, which is primarily non-renewable.

As shown in Table 10-12, electricity consumption is expected to decrease over the next approximately 20 years under the land use designations identified in the Housing Element Update, and electricity energy efficiency would improve. This is primarily attributed to the improved energy efficiency standards that new residential development would be subject to, and the net decrease in jobs<sup>25</sup> (and therefore the existing energy consumption behaviors associated with them that would also be less energy efficient than new residential units proposed by the project). As discussed in Section 10.2.2, CARB's Scoping Plan considers the use of electricity as an essential component of California's climate strategy. Therefore, electricity use is a necessary utility to support the new residential units identified in the Housing Element Update. Furthermore, as shown in Table 10-12, electricity consumption in Year 2040 would be more efficient than current conditions. For these reasons, the potential electricity consumed by future housing projects would not be wasteful, inefficient, or unnecessary. This impact would be ***less than significant***.

### **Natural Gas**

*Construction Use.* Substantial natural gas consumption is not anticipated to occur during construction activities associated with implementation of the Project. Fuels used for construction would generally consist of diesel and gasoline, which are discussed in the next subsection. Potential natural gas use during construction activities associated with future growth would not substantially contribute to overall energy consumption in the county, and would not be unnecessary, inefficient, or wasteful.

*Operational Use.* Natural gas consumption would be required for various purposes in the county's existing building stock, such as space and water heating in buildings. As with electricity, natural gas consumption was estimated using rates derived from the County 2030 CAP. Table 10-13 summarizes the estimated changes in natural gas consumption that would be

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<sup>25</sup>As described under Impact 10-1, the GHG and energy consumption estimates for the proposed Project in 2040 are based on metrics used and obtained from the TAMDM transportation model that was used to estimate VMT for the proposed Project.

facilitated in the Planning Area over the next approximately 20 years by adoption of the Housing Element Update.

**Table 10-13:  
 Proposed Project Natural Gas Consumption Estimates**

Metric	Natural Gas Consumption (Thousand Therms)		
	Existing (2019)	Project (2040) (A)	Net Change
Natural Gas Consumption	17,360	17,029	- 331
Service Population (SP)	86,705	108,379	21,674
Natural Gas Consumption Efficiency (Thousand therms/yr/SP)	0.20	0.16	- 0.04

Source: MIG, 2022 (see Appendix C).

- A. The natural gas estimates for the Project in 2040 reflect compliance with Mitigation Measure 10-1A; however, even without the implementation of Mitigation Measure 10-1A, natural gas consumption in new residential development proposed by the Project would not have been significant. The Draft 2022 Scoping Plan states (pg. 158), “While the electricity sector is using less fossil fuel due to increasing amounts of renewables, in the near term, fossil gas generation will continue to play a critical role in grid reliability until other clean, dispatchable alternatives are available and can be deployed” (CARB 2022b) Furthermore, the County Green Building Code currently sets forth requirements for increasing the energy efficient of a building if natural gas is used in building development. The additional energy efficiency that is required of new buildings would help ensure that energy is not being used in an unnecessary, inefficient, or wasteful manner.

Based on the demand calculations shown in Table 10-13, natural gas consumption estimates in 2040 are anticipated to decrease slightly based on the land use designations contained in the Housing Element Update. This is primarily attributable to implementation of Mitigation Measure 10-1A and reduced non-residential demand from fewer jobs. As explained in footnote (A) of Table 10-13, however, natural gas consumption associated with new development facilitated by the adoption of the Housing Element Update would not have been significant absent the implementation of Mitigation Measure 10-1A, because of the energy efficiency requirements specified in the County Green Building Code for developments that use natural gas in their construction. For these reasons natural gas use would not be wasteful, inefficient, or unnecessary. This impact would be ***less than significant***.

**Diesel and Gasoline Fuel**

*Construction Use.* Diesel and gasoline fuels, also referred to as petroleum in this subsection, would be consumed during construction activities future development activities envisioned by the proposed Project are undertaken. Fuel use by construction equipment would be the primary energy resource consumed during construction activities, and VMT associated with the transportation of construction materials (e.g., deliveries) and worker trips would also result in petroleum consumption. Whereas on-site, heavy-duty construction equipment and delivery trucks would predominantly use diesel fuel, construction workers would generally rely on gasoline-powered vehicles to travel to and from construction sites. State regulations such as LCFS would reduce the carbon intensity of transportation-related fuels, and all construction projects would be required to comply with CARB’s Airborne Toxic Control Measures, which restrict heavy-duty diesel vehicle idling to five minutes. Since petroleum use during construction would be temporary at each location and required to conduct development activities, it would not be unnecessary, wasteful, or inefficient.



*Operational Use.* Future development activities associated with construction of the housing sites identified in the Housing Element Update would consume fuel in the form of petroleum (i.e., gasoline and diesel) over the next approximately 20 years. The trips that consume fuel would primarily be attributable to people traveling to or from the unincorporated county for work, shopping, school, or other reasons. The amount of fuel these trips would consume was estimated using 2040 Marin County emissions inventory data from EMFAC2021 v1.0.2 and VMT estimates prepared by Kittelson and Associates for the Project (see Chapter 18, Transportation). The estimated diesel and gasoline fuel consumption associated with development of the land uses in the Planning Area that would be facilitated by adoption of the Housing Element Update are shown Table 10-14.

**Table 10-14:  
Proposed Project Vehicle Fuel Consumption Estimates**

Metric	Annual Vehicle Fuel Consumption (Gallons)		
	Existing (2019)	Project (2040)	Net Change
Total Diesel Consumption	2,825,813	2,473,319	- 352,494
Total Gasoline Consumption	25,859,547	23,270,045	- 2,589,502
Total Petroleum Consumption	28,685,360	25,743,364	- 2,941,996
Service Population	86,705	108,379	+ 21,674
Petroleum Consumption Efficiency (gal/day/SP) <sup>(A)</sup>	330.84	237.53	- 93.31

Source: MIG, 2022 (see Appendix C) and Kittelson and Associates 2022.

As shown in Table 10-14, annual diesel and gasoline fuel consumption in 2040 associated with the land use designations contained in the Housing Element Update are anticipated to be approximately 2,473,319 gallons and 23,270,045 gallons, respectively. Compared to 2019 conditions, this represents a decrease of approximately 352,494 and 2,589,502 gallons of diesel and gasoline, respectively. Overall petroleum consumption per service population is expected to decrease by approximately 28 percent, largely in part due to actions being taken at the state level to increase fuel economy and the use of EVs. Although not reflected in the petroleum estimates for the Project in 2040, County measures (e.g., through the County Green Building Code and 2030 CAP strategy LCT-C1) to expand the use of EVs would also help reduce the use of fossil fuels in vehicles.

Petroleum-fueled vehicles are necessary for transportation while the state enacts its long-term plans to shift to non-petroleum vehicles. In addition, petroleum-fueled vehicles will become more efficient over time, as shown in Table 10-13 and described above. The Project's petroleum consumption is therefore not wasteful or unnecessary. This impact would be ***less than significant***.

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**Impact 10-3: Conflict with or Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency.** [Threshold of Significance (d)] The Project would not conflict with nor obstruct a state or local plan adopted for the purposes of increasing renewable energy or energy efficiency. The County's Green Building Code expands upon the energy efficiency standards contained in the Title 24 Building Code for residential and non-residential buildings. The County Code requirements address electricity and natural gas efficiency in lighting, water, heating, and air conditioning, as well as the effects of the building envelope (e.g., windows,

doors, walls and rooves, etc.) on energy consumption. The 2019 Title 24 Building Code required the installation of solar panels on new residential development under three stories. The latest update to these standards, codified in 2022, extends solar requirements and introduces battery storage requirements to additional building types, including high-rise multifamily buildings, office buildings, and retail buildings. The County would enforce their Green Building Code standards during design review and building permit approval processes. Other state plans, such as increasing the RPS portfolio, and increasing fuel efficiency and the number of EVs on the road, would be implemented at the state level.

As shown in Section 10.2.2, the 2007 CWP includes policies that ensure future development of housing sites does not conflict with renewable energy plans. For example, Policy EN-1.1 requires the County to integrate energy efficiency and conservation requirements that exceed State standards, while Policy EN-1.2 specifies that the County will offer incentives that encourage energy efficiency technology and practices. In addition, the County would implement mitigation measures that support renewable energy and energy efficiency, and further reduce a less than significant impact. For example, Mitigation Measure 10-1A would require new residential development to be constructed without a natural gas connection, while Mitigation Measure 10-1C would reduce energy consumption from the transportation sector. It is anticipated that energy efficiency will continue to play a critical role in achieving long-term GHG emissions reductions.

For the reasons listed above, the proposed Project would comply with applicable state standards and would not impede any plan related to increasing renewable energy or energy efficiency. This impact would be ***less than significant***.

### **Cumulative Greenhouse Gas Impacts**

Global climate change is the result of GHG emissions worldwide; individual projects do not generate enough GHG emissions to influence global climate change. Thus, the analysis of GHG emissions is by nature a cumulative analysis focused on whether an individual project's contribution to global climate change is cumulatively considerable. As described under Impact 10-1, the proposed Project would result in GHG emissions that exceed the significance thresholds applied in this EIR and conflict with the 2017 Climate Change Scoping Plan, Plan Bay Area 2050, and the County 2030 CAP. The County would implement Mitigation Measures 10-1A through 10-1C; however, the Project's cumulative GHG impact would still be ***significant and unavoidable***.

### **Cumulative Energy Impacts**

The analyses presented in Impacts 10-2 and 10-3 are cumulative in nature. As described in the analysis, the proposed Project would not result in the unnecessary, inefficient, or wasteful use of energy resources nor would it conflict with or obstruct a state or local plan for increasing renewable energy or energy efficiency.

The proposed Project would not result in a substantial adverse cumulative impact with respect to energy. This impact would be ***less than significant***.

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## 11. HAZARDS AND HAZARDOUS MATERIALS

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Hazards and Hazardous Materials. <i>Would the project:</i></b>				
a) <i>Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?</i>			X	
b) <i>Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?</i>			X	
c) <i>Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?</i>			X	
d) <i>Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would create a significant hazard to the public or the environment?</i>			X	
e) <i>For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?</i>			X	
f) <i>Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?</i>			X	
g) <i>Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?</i>			X	
<b>[Note: This threshold is covered in Chapter 20, Wildfire, and is not included in this Chapter.]</b>				

This EIR chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, discusses Project goals, policies, and implementation programs that would avoid or reduce those potential impacts.

<sup>1</sup>State CEQA Guidelines, Appendix G, item IX (a through g).

## 11.1 ENVIRONMENTAL SETTING

### 11.1.1 Hazardous Materials

**A. State Database Search Results.** A search of the Department of Toxic Substance's (DTSC) EnviroStor<sup>2</sup> database and the State Water Resources Control Board's (State Water Board) GeoTracker<sup>3</sup> database identified 175 records for active and closed hazardous materials sites within the county. Of these, many sites have undergone or are undergoing hazardous materials remediation or may require remediation pending further testing. There are four sites listed as "Closed." Sites listed with "Open" status total 55, with 13 sites listed "Open – Site Assessment," 10 sites listed "Open – Verification Monitoring," 10 sites listed "Open – Inactive," five sites listed "Open – Remediation," three sites listed "Open – Eligible For Closure," and the remainder listed with other subclassifications. Sites listed as "No Further Action" or "No Action Required" total 31. There are eight sites listed as "Active" and 13 sites listed as "Inactive – Action Required" or "Inactive – Needs Evaluation." Sites listed with "Certified" status total 13. Sites referred to another agency, such as RWQCB, total 50. One site is listed as "Informational Item / Review Complete." The list of sites is provided in Appendix F of this EIR.

It is important to note that inclusion in either database does not mean that the site is necessarily considered a hazard.

**B. Cortese List Search.** The Cortese List contains the provisions in California Government Code Section 65962.5, enacted to create a "list" (now a set of information resources) of hazardous materials sites in the state. The presence of a site on the Cortese List has bearing on local permitting processes and compliance with CEQA.<sup>4</sup> There are five data resources that provide information regarding sites that meet the Cortese listing requirements.<sup>5</sup> The following results are from a Cortese List data resource review conducted on June 12, 2022:

1. The DTSC's Hazardous Waste and Substances Site List identifies five sites in the County that are on the State's Cortese list. These sites are:
  - a. Fort McDowell; 4 miles north of San Francisco, Angel Island
  - b. Fair Anselm Center, Inc.; 709 & 711 Center Boulevard, Fairfax

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<sup>2</sup>EnviroStor is an on-line research and Geographic Information System tool that allows a search for information on investigation, cleanup, permitting, and/or corrective actions that are planned, being conducted, or have been completed under DTSC's oversight.

<sup>3</sup>GeoTracker is an on-line research tool similar to EnviroStor, but it collects information from different databases, such as State and local agency lists of Leaking Underground Storage Tanks (LUSTs) as well as permitted Underground Storage Tanks (USTs).

<sup>4</sup>CalEPA, Cortese List Background and History, available at: <https://calepa.ca.gov/sitecleanup/corteselist/Background/>, accessed 6/12/22.

<sup>5</sup>Cortese List Data Resources (available at: <https://calepa.ca.gov/sitecleanup/corteselist/>): (1) the DTSC EnviroStor database (Hazardous Waste and Substances Site List); (2) the Water Board GeoTracker database (Leaking Underground Storage Tank Site List); (3) the Water Board's list of solid waste disposal sites with waste constituents above hazardous waste levels outside the waste management unit; (4) the Water Board's list of active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO); and (5) the DTSC list of hazardous waste facilities subject to corrective action pursuant to Section 25178.5 of the Health and Safety Code.



- c. Hamilton AAF (J09CA7062) (GSA Phase II\_LF26) IR; Highway 101, 3 miles north of Lucas Valley Road, Novato
- d. Hamilton AAF – (J09CA7062) – North Antenna Field – IR/MMRP; Highway 101, 3 miles north of Lucas Valley Road, Novato
- e. Bolinas Avenue Center; 4&8 Bolinas Avenue & 21 San Anselmo Avenue, San Anselmo

2. The Water Board's Leaking Underground Storage Tank Site List identifies 371 sites in the County that are on the State's Cortese list. All but 18 of these sites are closed. The 18 open sites are:

- a. Former Bianco Cadillac/Saab-Subaru; 201 Casa Buena Drive, Corte Madera
- b. Maintenance Facility – Samuel Taylor Park; Unknown Samuel Taylor Park, Lagunitas
- c. Former Econogas Station; 2070 Redwood Highway, Larkspur
- d. Marin Car Wash; 2066 Redwood Highway, Larkspur
- e. Chevron Strawberry Food Mart; 580 Redwood Highway, Mill Valley
- f. Jiffy Lube #655; 374 Miller Avenue, Mill Valley
- g. Marin Car Wash; 584 Redwood Highway, Mill Valley
- h. Chevron; 5810 Nave Drive, Novato
- i. Former Mobil RAS #04-HTR; 1400 Novato Boulevard South, Novato
- j. Indian Valley College; 1800 Ignacio Boulevard, Novato
- k. Novato Bus Facility; 801 Golden Gate Place, Novato
- l. Novato Unified School District Maintenance Facility; 819 Olive Street, Novato
- m. Shell; 2085 Novato Boulevard South, Novato
- n. Unocal; 7455 Redwood Boulevard, Novato
- o. Former Chevron; 700/750 Sir Francis Drake Boulevard, San Anselmo
- p. San Rafael City Schools Maintenance Facility; 38 Union Street, San Rafael
- q. Shell; 834 Irwin Street, San Rafael
- r. Ledger Ranch 2000; 5700 Middle Road, Petaluma (Tomales)

3. The Water Board's list of solid waste disposal sites with waste constituents above hazardous waste levels outside the waste management unit does not include any sites in Marin County.

4. The Water Board's list of active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO) includes 15 sites in the County, seven of which are listed as "historical," seven listed as "never active," and one listed as "active." The active site is the Ross Valley Sanitary District, which is working to comply with a 2013 Water Board CDO pertaining to sanitary sewer overflows and other wastewater-related issues.<sup>6</sup>

5. The DTSC list of hazardous waste facilities subject to corrective action pursuant to Section 25178.5 of the Health and Safety Code includes the identical sites listed above under (1).

C. Superfund Database Search. A review of the U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System (SEMS)<sup>7</sup> indicates 22 sites listed for Marin County. None of the sites is on the National Priorities List (NPL), which is EPA's list of the most serious sites identified for long-term cleanup. Of the 22 sites, five are identified as active. Two of these sites are under Federal jurisdiction: (1) Hamilton Air Force Base (AFB) in Novato, Federal facility lead cleanup; and (2) RCA Antenna Farm in Bolinas, additional assessment needed. Of the remaining three sites, two are vessel salvage operations: (1) the F/V Challenger, removal of a decommissioned fishing vessel aground off of Dillon Beach; (2) the Spirit Of Sacramento, a paddle-wheel steamship towed to the Army Corps of Engineers facility in Sausalito in 2016 for cleanup of fuel and oil; and (3) a paint spill on Lucas Valley Road in 2015, which was cleaned up.

D. Marin County CUPA. The Marin County Certified Unified Programs Agency (CUPA) administers the permitting, inspections, and enforcement activities of environmental and emergency management programs for the County and regulates and inspects Marin businesses for hazardous waste. The Marin County CUPA helps businesses meet compliance requirements. The CUPA has oversight for nearly 900 hazardous sites countywide and maintains a list.<sup>8</sup> In addition, the MarinMap tool includes a "Hazardous Sites (Cortese)" layer, which identifies approximately 27 sites in unincorporated County areas.<sup>9</sup> These primarily include leaking underground storage tank (LUST) cleanup sites, other cleanup program sites, and land disposal sites. This information is provided in Appendix F of this EIR.

E. Proximity to Schools. The majority of the schools in the county are located in the City Centered Corridor, with some schools in the Baylands Corridor. In the Inland Rural Corridor and

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<sup>6</sup>California Regional Water Quality Control Board, San Francisco Bay Region, Cease and Desist Order No. R2-2013-0020, May 13, 2013.

<sup>7</sup>The Superfund Enterprise Management System (SEMS) is the official repository for site and non-site specific Superfund data in support of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which is commonly known as Superfund. Superfund sites are lands within the United States that have been contaminated by hazardous waste and identified by the EPA as candidates for remediation because they pose a risk to human health and/or the environment. It contains information on hazardous waste site assessment and remediation from 1983 to the present. U.S. EPA, SEMS search: <https://cumulis.epa.gov/supercpad/Cursites/srchsites.cfm>, accessed 7/9/22.

<sup>8</sup>Chelsea Hall, Environmental Planning & Housing Aide, Marin County Community Development Agency, email dated May 13, 2022, to MIG, Inc.

<sup>9</sup>County of Marin, Marin MapViewer, "Hazardous Sites-Cortese," <https://www.marinmap.org/Html5Viewer/Index.html?viewer=smmdataviewer>, accessed 7/10/22.

Coastal Corridor, there are fewer schools due to a smaller and more dispersed population. The Project proposes to use vacant or underutilized sites for new housing, which could result in new residences being developed near existing schools. The new housing would generally follow the existing development pattern, with much of the new housing located in the City Centered Corridor where, in comparison to the remainder of the county there are more schools.<sup>10</sup> However, as discussed in subsection 11.3.3, Impacts and Mitigation Measures, the materials used in households would not disperse harmful emissions because they would be typical household products, such as liquid and solid cleaners and lawn treatments, which would not be used or stored in the quantities or toxicity of chemicals used in commercial and industrial businesses, such as a dry cleaners, manufacturing plants, research laboratories, and auto repair shops.

### 11.1.2 Airport Hazards

There is one public use airport in the Marin County, Gness Airfield. Gness Airfield is located east of the City of Novato, adjacent to U.S. 101, and north of Black John Slough and Rush Creek preserve. It is about one mile west of the Marin County-Sonoma County border. Four other private use facilities include San Rafael Airport and San Rafael Private Heliport, both in San Rafael; and Commodore Center Heliport and Commodore Center Seaplane Base, both in Sausalito. These four other private use facilities are included in this description for conservative disclosure purposes.

The Marin County Airport Land Use Commission (ALUC) is responsible for studying and making recommendations to the Board of Supervisors regarding land use in and around Gness Airfield. Policy direction for the Gness Airfield is guided by the Airport Land Use Plan (ALUP).<sup>11</sup> The ALUP only applies to Gness Airfield; private airports are not required to prepare land use plans.

The ALUP sets forth policies for evaluating proposed development and land use plans in the vicinity of Gness Airfield and establishes a “referral area boundary” within which review and approval by the ALUC is required, with some exceptions for projects and zoning changes unlikely to create compatibility problems with the airfield. As shown on Figure 11-1, this boundary has been established as two miles from the future boundary of the airfield.<sup>12</sup>

Federal Aviation Regulations, Part 77, “Objects Affecting Navigable Airspace” (commonly referred to as FAR Part 77) sets forth standards and review requirements for protecting the airspace for safe aircraft operation, particularly by restricting the height of proposed structures and minimizing other potential hazards to aircraft such as reflective surfaces, flashing lights, and electronic interference. These regulations require that the FAA be notified of certain proposed construction projects located within an extended zone defined by an imaginary slope radiating outward for several miles from an airport’s runways, or which would otherwise stand at least 200 feet in height above ground.

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<sup>10</sup>Google Earth with “sites inventory” KML; and Marin GeoHub, “School,” <https://gisopendata.marincounty.org/datasets/MarinCounty::school/explore?location=38.028323%2C-122.701000%2C11.04>; Marin County Housing & Safety Elements, “Map Atlas: Candidate Housing Sites and Existing Conditions and Constraints,” <https://www.marincountyatlas.org/hazards>, accessed 6/8/22.

<sup>11</sup>Marin County Airport Land Use Commission, Airport Land Use Plan, Marin County Airport Gness Field, adopted June 10, 1991.

<sup>12</sup>ALUP, p. 3.11.




Downtown City of Novato — mixed Residential, Commercial, and Industrial in this area.

ZONING DESIGNATIONS	COUNTY	CITY
A2	X	F
A2B4	X	X
A2B10	X	F
A10	X	F
A50	X	F
MS, MS2P	X	F
AP	X	F
RRP1.5	X	F
MR2	X	F
MR65	X	F
COB	X	F
C1	X	F
C2	X	F
CP	X	F
M1	X	F
M2	X	F
M3	X	F
MP	X	F
PC	X	F
R1	X	F
R1B1	X	F
R1B2	X	F
R1B3	X	F
R1B4	X	F
R3	X	F
RA	X	F
RA311	X	F
R2R	X	F
RMF	X	F
RR	X	F
RSP	X	F
RSPB	X	F
RM	X	F

**AVIATION SAFETY ZONES**

- ① = Clear Zone, Primary Surface, and Approach Area to 1,000' out
- ② = Approach Zone from Clear Zone to 3,000' out
- ③ = Traffic Zone / FAR Part 77 Horizontal Surface
- ④ = Overflight Zone / FAR Part 77 Central Surface
- ⑤ = Referral Area Boundary, 2 miles from future Airport property line

NOTE: Areas which have been pre-zoned by the City of Novato are not shown. Please refer to City of Novato zoning maps.

  
 Scale: 1" = 2,000'  
 Source: Cortright & Seibold; County of Marin Planning Department

**Figure 11.1 - Gross Airfield Referral Area Boundary**  
 Marin County Housing and Safety Elements Environmental Impact Report

Approximately two dozen candidate housing sites are located within two miles of either Gness Airfield or the four identified private use facilities. These air facilities, including about three sites within two miles of Gness Airfield, about six sites within two miles of San Rafael Airport, about two sites within two miles of San Rafael Heliport, and about 15 sites within two miles of Commodore Center Heliport and Commodore Center Seaplane Base, which are nearly adjacent to each other.<sup>13</sup> For sites within the Gness Airfield Referral Area Boundary, proposed projects would require ALUC review.

### 11.1.3 Emergency Response or Evacuation Plan

A. Emergency Operation Plan. The Marin County Sheriff's Office of Emergency Services (OES) is responsible for emergency management services in the Marin Operational Area (OA), which is comprised of the 11 cities and towns, over 300 special districts, and the unincorporated areas within the County. The OES coordinates emergency operations activities among all the various local jurisdictions and serves as the liaison between the State and all the local government political subdivisions comprising Marin County.

When directed by County emergency management authority, the Office of Emergency Services establishes the Marin County / Operational Area Emergency Operations Center (EOC), which is a location for centralized emergency management during a major emergency or disaster. EOC staffing varies depending upon the emergency.<sup>14</sup>

The Marin Operational Area (OA) Emergency Operations Plan (EOP) addresses the planned response to extraordinary emergency situations associated with large-scale disasters affecting Marin County. The EOP establishes the emergency management organization to mitigate significant emergencies or disasters in the Marin OA, such as earthquake, flood, wildland fire, winter storm, tsunami, landslide, drought, climate change/sea level rise, public health crisis, extreme temperature event, hazardous material incident, transportation accidents, dam failure, energy disruption, radiological incident, terrorism, civil disturbance, national security emergency, and security related threats. The EOP establishes the overall operational concepts for Marin County's Emergency Operations Center (EOC) activities and the recovery process. The Marin Sheriff's Office of Emergency Services (OES) is responsible for periodic review, updates, re-publishing and re-distribution of the EOP.

B. Evacuation Planning. Fire Safe Marin, Marin County's Fire Safe Council, promotes public and private partnerships to enhance wildfire safety and build Firewise Communities. Fire Safe Marin is a nonprofit organization with the dual mission of reducing wildland fire hazards and improving fire safety awareness in Marin County. However, Fire Safe Marin and many Marin fire agencies, cities and towns, and other partners are working together to develop improved wildfire evacuation maps and messaging for residents of Marin's wildland urban interface communities. Fire Safe Marin hosts a website with interactive evacuation route maps. These FireClear maps, funded by fire agencies, cities, and towns, and a grant from CALFIRE, were published as they were completed over the course of 2020.

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<sup>13</sup>Google Earth with "sites inventory" and FAA "airports" KMLs, 7/12/22.

<sup>14</sup>Marin County Sheriff's Office, Office of Emergency Services, <https://www.marinsheriff.org/about-us/field-service-bureau/office-of-emergency-services>, accessed 7/15/22.

In addition, as part of the County's evacuation planning and response efforts, the entire county has been divided into individual evacuation zones, which are used for rapid evacuation notification. Pre-established evacuation zones assist first responders and emergency service agencies with preparation prior to an emergency, which helps effective evacuation by reducing confusion and helping residents evacuate quickly. Marin County is using ZoneHaven, a community evacuation interface that allows the public access to real-time status updates and instructions for their evacuation zone and provides County municipalities and fire responders with an evacuation planning application. The County can use ZoneHaven to issue evacuation, shelter in place, and other emergency orders. Individual zones are described by name, borders, current status, and additional information. If a zone is activated for evacuation order or warning, or for shelter in place, the reason for the activation will be provided and, if necessary, additional information such as temporary evacuation point, evacuation route or routes, and other critical information will be provided.

#### **11.1.4 Wildfire Hazards**

Chapter 20 of the Draft EIR discusses hazards related to wildfire.

### **11.2 REGULATORY SETTING**

#### **11.2.1 Federal Laws and Regulations**

**U.S. Environmental Protection Agency.** The U.S. Environmental Protection Agency (EPA) is the primary federal agency that regulates hazardous materials and waste. The agency is responsible for researching and setting national standards for a variety of environmental programs and delegates to states and Native American tribes the responsibility for issuing permits and for monitoring and enforcing compliance. EPA programs promote handling hazardous wastes safely, cleaning up contaminated land, and reducing waste volumes through such strategies as recycling. EPA Region 9 has authority in the Bay region for (1) regulating chemical and hazardous materials use, storage, treatment, handling, transport, and disposal practices; (2) protecting workers and the community (along with Cal/OSHA, see below); and (3) integrating the federal Clean Water Act and Clean Air Act into California legislation. Under the authority of RCRA, and in cooperation with State and tribal partners, the EPA Region 9 Waste Management and Superfund Divisions manage programs for site environmental assessment and cleanup, hazardous and solid waste management, and underground storage tanks.

**U.S. Department of Transportation.** The U.S. Department of Transportation (DOT) governs transportation of chemicals and hazardous materials under Title 49 of the Code of Federal Regulations (CFR). DOT regulates the types of containers, labeling, and other restrictions to be used in the movement of such material on interstate highways. Under the Hazardous Materials Transportation Act and the Hazardous Materials Transportation Uniform Safety Act, State agencies that have primary responsibility for enforcing federal and State regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation (Caltrans).

**Federal Aviation Administration.** The Federal Aviation Administration (FAA) provides regulations controlling land use in airport vicinities, as stipulated in Federal Aviation Regulations (FAR) Part 77, Safe, Efficient Use and Preservation of the Navigable Airspace. These regulations require that any proposed new construction or expansion of existing structures that would penetrate any of the FAR Part 77 based "imaginary" horizontal and sloping navigational surfaces for airports would be deemed incompatible unless specifically determined otherwise by

the FAA. Projects that plan construction or alterations which may affect navigable airspace are required to file notice with the FAA.

**Occupational Safety and Health Administration.** The Occupational Safety and Health Administration (OSHA) oversees administration of the Occupational Safety and Health Act, which requires specific training for hazardous materials handlers, provision of information to employees who may be exposed to hazardous materials, and acquisition of material safety data sheets (MSDS) from materials manufacturers. Material safety data sheets describe the risks and proper handling and procedures related to particular hazardous materials. Employee training must include response and remediation procedures for hazardous materials releases and exposures.

**Resource Conservation and Recovery Act (RCRA) of 1976, as Amended by the Hazardous and Solid Waste Amendments of 1984.** Federal hazardous waste regulations are generally promulgated under the authority of RCRA. Any business, institution, or other entity that generates hazardous waste is required to identify and track its hazardous waste from the point of generation until it is recycled, reused, or disposed. The Act also sets forth a framework for managing nonhazardous solid wastes.

**Comprehensive Environmental Response, Compensation, and Liability Act and the Superfund Amendments and Reauthorization Act of 1986.** Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, on December 11, 1980. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified.

**Emergency Planning Community Right-to-Know Act.** The Emergency Planning Community Right-to-Know Act (EPCRA), also known as Superfund Amendments and Reauthorization Act (SARA) Title III, was enacted in October 1986. This law requires any infrastructure at the State and local levels to plan for chemical emergencies. In California, SARA Title III is implemented through the California Accidental Release Program (CalARP).

**National Response Framework.** The 2019 National Response Framework, published by the Department of Homeland Security, is a guide to how the Nation responds to all types of disasters and emergencies. The Framework describes specific authorities and best practices for managing incidents that range from serious local to large-scale terrorist attacks or catastrophic natural disasters. In addition, the Framework describes the principles, roles, responsibilities, and coordinating structures for responding to an incident and further describes how response efforts integrate with those of the other mission areas.

### 11.2.2 State Laws and Regulations

**California Environmental Protection Agency.** The California Environmental Protection Agency (CalEPA) establishes regulations governing the use of hazardous materials in the State in order to restore, protect, and enhance the environment; and to ensure public health, environmental quality, and economic vitality. The Office of Emergency Services (OES) coordinates State and local agencies and resources for educating, planning, and warning citizens of hazardous materials and related emergencies, including organized response efforts in case of emergencies. CalEPA also oversees the unified hazardous waste and hazardous materials management regulatory program (Unified Program), which enables counties and local

government to enforce the administrative requirements, permits, inspections, and enforcement activities for environmental and emergency management programs related to hazardous materials.

**CALFIRE, Office of the State Fire Marshal (CAL FIRE – OSFM).** The Office of the State Fire Marshal evaluates and provides technical assistance for the Hazardous Material Management Plan (HMMP), the Hazardous Materials Inventory Statement (HMIS) and the Aboveground Petroleum Storage Act (APSA) Programs. The HMMP and HMIS Program are closely tied to the Business Plan Program. In addition, CALFIRE protects life and property through fire prevention engineering programs, law and code enforcement and education. CALFIRE identifies areas within Local Responsibility Areas and recommends fire hazard severity zones; CALFIRE also designates fire hazard severity zones for areas within State Responsibility Areas.

**California Department of Transportation.** The California Department of Transportation (Caltrans) manages more than 50,000 miles of California's highway and freeway lanes, provides inter-city rail services, permits more than 400 public-use airports and special-use heliports, and works with local agencies. Caltrans is also the first responder for hazardous material spills and releases that occur on those highway and freeway lanes and inter-city rail services.

**California Highway Patrol (CHP).** The CHP has primary regulatory responsibility for the transportation of hazardous wastes and materials.

**California Occupational Safety and Health Administration.** The California Occupational Safety and Health Administration (Cal/OSHA) is responsible for promulgating and enforcing State health and safety standards and implementing federal OSHA laws. For example, Cal/OSHA's regulatory purview includes provisions to minimize the potential for release of asbestos and lead during construction and demolition activities.

**California Health and Safety Code.** California Health and Safety Code (H&SC) Division 20, Chapter 6.95, and Title 19 of the California Code of Regulations, Section 2650 et seq., set out the minimum requirements for business emergency plans and chemical inventory reporting. These regulations require businesses to provide emergency response plans and procedures, training program information, and a hazardous material chemical inventory disclosing hazardous materials stored, used, or handled on site. A business which uses hazardous materials or a mixture containing hazardous materials must establish and implement a business plan if the hazardous material is handled in certain quantities. California H&SC, Division 20, Chapter 6.8 also provides for entering into enforceable agreements for sites requiring corrective action to remove the threat of a hazardous substance release, or to determine the nature and extent of the release and prepare and implement a remedial action plan. The procedures for a variance or for removing or rescinding any easement, covenant, or similar restriction imposed on a property due to its hazardous substance status are specified in H&SC Sections 25233 and 25234.

**California Department of Toxic Substances Control.** The California Department of Toxic Substances Control (DTSC), which is a department of CalEPA, is authorized to carry out the federal RCRA hazardous waste program in California to protect people from exposure to hazardous wastes. The department regulates hazardous waste, cleans up existing contamination, and looks for ways to control and reduce the hazardous waste produced in California, primarily under the authority of RCRA and in accordance with the California Hazardous Waste Control Law (California H&SC Division 20, Chapter 6.5) and the Hazardous Waste Control Regulations (Title 22, California Code of Regulations [CCR], Divisions 4 and 4.5).



Permitting, inspection, compliance, and corrective action programs ensure that people who manage hazardous waste follow federal and State requirements and other laws that affect hazardous waste specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

**Underground Tank Regulations.** Title 23, Division 3, Chapter 16 (Underground Tank Regulations) of the California Code of Regulations identifies the regulations applicable to new and existing underground storage tanks. These regulations establish monitoring, maintenance, reporting, abatement, and closure procedures for all underground storage tanks in the state. These regulations are administered by the Los Angeles Regional Water Quality Control Board.

**Cortese List.** California Government Code Section 65962.5 established the "Cortese List," which requires state agencies to compile a list of all properties affected by hazardous waste and develop a framework for how they will continue to be monitored and addressed by the State. A site's presence on the list has bearing on the local permitting process as well as on compliance with the California Environmental Quality Act (CEQA). This statute was enacted over 20 years ago, and some of the provisions refer to agency activities that are no longer being implemented and in some cases the information to be included in the Cortese List does not exist.

**California Porter Cologne Water Quality Control Act.** Division 7 of the California Water Code (Water Code) identifies the enforcement and implementation rights of the Regional Water Quality Control Board to remedy discharges to surface waters or groundwater that would or could violate water quality standards. Standard remedies include issuance of Cease and Desist Orders and cleanup and abatement procedures.

**State Water Resources Control Board.** The State Water Resources Control Board (State Water Board) is authorized to implement the Local Oversight Program (LOP) for the abatement, and oversight of the abatement, by certified local agencies of unauthorized releases of hazardous substances from underground storage tanks (USTs), and maintains a system for storing and retrieving data pertaining to the remediation of unauthorized releases from USTs. The State Water Board is required to notify the appropriate Regional Water Quality Control Board before certifying, denying certification, or withdrawing certification of an agency.

**California Asbestos Standards in Construction.** The California Division of Occupational Safety and Health (Cal/OSHA) enforces the California Asbestos Standards in Construction (8 CCR Section 1529). These standards regulate exposure to asbestos in all construction work including demolition of structures. These regulations establish entry and exit procedures after working in asbestos contaminated areas and establish specific control measures designed to protect workers depending on the type of asbestos they are handling. Such procedures include minimum air circulations, use of respirators, wetting of materials, clothing laundering, construction and demolition equipment requirements, and shielding specifications. Notification procedures are also in place that require building owner and employee noticing as well as external and internal hazard signage. All asbestos workers are required to complete training programs and register as an asbestos contractor, depending on the type of asbestos being removed. Medical examination requirements are also required to monitor worker health, generally on an annual basis.

**California Construction Safety Orders for Lead.** Title 8, Section 1532.2 (Lead) of the California Code of Regulations establishes the requirements for any construction worker who may be exposed to lead during demolition or salvage, removal or encapsulation, new construction, and cleanup activities. The construction safety orders establish an action level of

30 micrograms of lead per cubic meter ( $\mu\text{g}/\text{cm}^3$ ) of air calculated over an 8-hour time-weighted average without regard for the use of a respirator, meaning this is the limit where safety protocols must be initiated, such as use of a respirator. Under no circumstance may a worker be exposed to  $50 \mu\text{g}/\text{cm}^3$  over an 8-hour weighted period. These regulations require implementation of engineering and work practice controls such as respiratory protection, protective clothing, housekeeping, hygiene practices, and signage requirements to meet worker exposure limits. Medical monitoring and training requirements are also identified.

**Hazardous Materials Business Plan (CERS Annual Submittal).** In 1986, the California Governor's Office of Emergency Services (Cal OES) established the Hazardous Materials Business Plan (HMBP) Program, which prevents or minimizes damage to the public and the environment from a release of hazardous materials. Under the Program, California businesses that handle hazardous materials were required to submit an HMBP each year. Sections 25508 and 25508.2 of the Health and Safety Code (Assembly Bill 1429, passed on July 9, 2019) requires a business with a facility that is not required to submit Tier II information pursuant to the above-mentioned federal provision and is not subject to the provisions governing those aboveground storage tanks to submit its business plan once every three years, instead of annually. Marin County requires all hazardous materials handlers operating under the jurisdiction of the County to submit an updated HMBP, including the hazardous materials inventory, site map, contingency plan, and employee training plan information via the Statewide information management system which is also known as the California Environmental Reporting System (CERS).

**Emergency Services Act (Government Code Sections 8550 through 8669.7).** Under the Emergency Services Act, the State of California developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an integral part of the plan, which is administered but the Governor's Office of Emergency Services. The Office of Emergency Services coordinates the responses of other agencies, including the EPA, California Highway Patrol, Regional Water Quality Control Boards, Air Quality Management Districts, and county disaster response offices.

**The Emergency Planning Community Right-to-Know Act (Health and Safety Code Section 25545).** The Emergency Planning Community Right-to-Know Act requires facilities to disclose to the State and Local Emergency Planning Committee the quantities and type of toxic chemicals stored. To avoid multiple reports to various agencies, the California Health and Safety Code requires notification of chemical inventory to the Administering Agency (DTSC). Notification of chemical inventory is accomplished through completion of a Hazardous Materials Business Plan and inventory.

**Standardized Emergency Management System Chapter 2, Division 2, Title 19 of the California Code of Regulations.** The standardized Emergency Management System (SEMS) is intended to standardize responses to emergencies involving multiple jurisdictions or multiple agencies. SEMS requires that emergency response agencies use basic principles and components of emergency management, multi-agency or inter-agency coordination, the operational area concept, and established mutual aid systems. Local government must use SEMS in order to be eligible for State funding of response-related personnel costs.

**California Disaster and Civil Defense Master Mutual Aid Plan.** The California Disaster and Civil Defense Master Mutual Aid Plan outlines policies, procedures, and authorities for provision of emergency management personnel from unaffected jurisdictions to support affected

jurisdictions during an emergency event, in accordance with the Master Mutual Aid Agreement. The Master Mutual Aid Agreement establishes that jurisdictions should voluntarily aid and assist each other in the event that a disaster should occur, by the interchange of services and facilities, including, but not limited to, fire, police, medical and health, communication, and transportation services and facilities.

**State Emergency Plan.** In 2009, the California State Emergency Plan was adopted to address the State's response to extraordinary emergency situations associated with natural disasters or human-caused emergencies. The State Emergency Plan describes the methods for carrying out emergency operations, the process for rendering mutual aid, the emergency services of governmental agencies, and how the public will be informed during an emergency or disaster. The Plan was updated in 2017.

**California Aeronautics Act (Public Utilities Code, Section 21001 et seq.).** The Aeronautics Act requires airport land use commissions to prepare an Airport Land Use Compatibility Plan (ALUCP) for nearly all public-use airports in the State. The intent of the ALUCP is to encourage compatibility between airports and the various land uses that surround them. The State Aeronautics Act provides for the right of flight over private property, unless conducted in a dangerous manner or at altitudes below those prescribed by Federal authority (Section 21403(a)). The act also gives the State Department of Transportation and local governments the authority to protect the airspace defined by FAR Part 77 criteria. Sections 21655 through 21659 regulate obstructions to air navigation and air facilities.

### 11.2.3 Regional/Local Regulations

**San Francisco Regional Water Quality Control Board.** One of nine regional boards in California, the San Francisco Bay Regional Water Quality Control Board (RWQCB): (1) protects surface and groundwater quality from toxic contamination and pollutants discharged or threatened to be discharged to the Waters of the State; (2) regulates public water systems; and (3) enforces the federal and State Safe Drinking Water acts through the Drinking Water Program. The RWQCB issues and enforces National Pollutant Discharge Elimination System (NPDES) permits and regulates leaking underground storage tanks (LUSTs) and other sources of groundwater contamination.

**Bay Area Air Quality Management District.** The Bay Area Air Quality Management District (BAAQMD) regulates the demolition and renovation of buildings and structures that may contain asbestos, and the manufacture of materials known to contain asbestos. BAAQMD is vested with authority to regulate airborne pollutants through both inspection and law enforcement, and is to be notified 10 days in advance of any proposed demolition or abatement work. BAAQMD regulations must always be followed when removing asbestos or demolishing buildings.

**Marin County Airport Land Use Commission.** The Marin County Airport Land Use Commission (ALUC) studies land use and development proposals in and around Gness Airfield and makes recommendations to the Board of Supervisors to ensure that future land uses in the surrounding area remain compatible with foreseeable aircraft activity. Their review is based on the Airport Land Use Plan, Marin County Airport Gness Field (ALUP), adopted June 10, 1991. The ALUP sets forth policies regarding airspace/height restrictions and/or obstructions to air navigation, aviation safety and related planning considerations, and noise/land use compatibility standards. The ALUP establishes a "referral area boundary" within which review and approval by the ALUC is required, with some exceptions for projects and zoning changes unlikely to create compatibility problems with the airfield.

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses protecting residents and structures from natural and man-made hazards (including exposure to hazardous materials and remediation for existing and future development) and emergency planning and preparedness. These policies are contained in the Natural Systems and Agriculture Element and the Socioeconomic Element of the 2007 Countywide Plan. Applicable adopted Countywide Plan policies include:

**Natural Systems and Agriculture Element – Environmental Hazards policies**

- Policy EH-1.3: Identify Evacuation Routes. Provide the public with information identifying accessible evacuation routes for fire, geologic, and other hazards.
- Policy EH-4.1: Limit Risks to Structures. Ensure that adequate fire protection is provided in new development and when modifications are made to existing structures.
- Policy EH-4.2: Remove Hazardous Vegetation. Abate the buildup of vegetation around existing structures or on vacant properties that could help fuel fires. (See also Natural Systems and Agriculture Element, BIO-1.4, Support Vegetation and Wildlife Disease Management Programs).
- Policy EH-4.3: Adopt and Implement a Fire Management Plan. Develop a proactive approach to manage wildfire losses by identifying hazard risks and enacting effective mitigation strategies.
- Policy EH-4.5: Regulate Land Uses to Protect from Wildland Fires. Use land use regulations, including but not limited to subdivision approvals and denials, as means of protecting people and property from hazards associated with wildland fires.

**Socioeconomic Element – Public Safety policies**

- Policy PS-3.1: Plan Thoroughly for Emergencies. Ensure that the County, its citizens, businesses, and services are prepared for effective response and recovery in the event of emergencies or disasters.
- Policy PS-3.2: Safe Public Structures. Protect public health and safety through appropriate siting and rehabilitation of public facilities.
- Policy PS-4.1: Regulate and Reduce Hazardous Material Use. Control the use and storage of hazardous materials to minimize their presence in, and potential dangers to, the community and environment.

**Socioeconomic Element – Environmental Justice policies**

- Policy EJ-1.1: Identify and Target Impacted Areas. Use available measurement data to map locations with known toxins and other health-threatening pollutants.
- Policy EJ-1.2: Reduce the Effects of Toxins. Decrease the presence and impact of toxins, particularly in disproportionately impacted communities.

- Policy EJ-1.3: Avoid New Toxin Sources. Stringently evaluate the siting of facilities that might significantly increase pollution, especially near already disproportionately impacted communities.

**Marin County Code.** County Code Chapters 7.80 through 7.84 establish the County Public Works Department as the "Certified unified program agency (CUPA)" for both the incorporated and unincorporated areas of Marin County, and includes standards and procedures regarding the reporting of the location, type, quantity and health risks of hazardous materials; the generation, handling, use, storage and disposal of hazardous materials; underground storage tanks; aboveground storage of petroleum products; hazardous materials business plans; and the California Accidental Release Prevention Program. As stated in County Code Chapter 16.16.04, Marin County has adopted the 2019 California Fire Code, 2018 International Fire Code, and 2018 International Wildland-Urban Interface Code, with certain amendments and/or modifications explained in that County Code Chapter, including provisions for the management of hazardous materials. As stated in County Code Title 19, the County has adopted the 2019 editions of the California Building Code (CBC) and the California Residential Code, with exceptions, additions, and deletions as provided in that County Code Title. County Code Section 19.04.064 incorporates amendments to Chapter 7A of the 2019 CBC that apply to new buildings, additions and exterior remodels to buildings located in any Fire Hazard Severity Zone (FHSZ) or any Wildland Urban Interface (WUI) Fire Area designated by the enforcing agency and requires use of fire-resistant materials and construction techniques for new buildings, additions, and exterior remodels to buildings located in a designated FHSZ or WUI fire area.

**Marin Operational Area Emergency Operations Plan.** In 2014, the Marin County Sheriff's Office of Emergency Services prepared the Marin Operational Area (OA) Emergency Operations Plan (EOP) to address the planned response to extraordinary emergency situations associated with large-scale disasters affecting Marin County. The EOP also addresses integration and coordination with other governmental agencies when required. The EOP provides the overall concept, organizational framework, and policies for responding to a major emergency or disaster within the Operational Area. In addition, the EOP establishes policies and procedures, and assigns responsibilities, to ensure the effective management of emergency operations within the Marin OA, including how and when the EOC staff is activated.

**Marin County Certified Unified Programs Agency.** The Marin County Certified Unified Programs Agency (CUPA) administers the permitting, inspections, and enforcement activities of environmental and emergency management programs for the County and regulates and inspects Marin businesses for hazardous waste. The Marin County CUPA helps businesses meet compliance requirements. The CUPA has oversight for nearly 900 hazardous sites countywide and implements programs related to above-ground and underground storage tanks, hazardous waste generators and permitting, business plan/hazardous material management, and the California Accidental Release Prevention program (CalARP).

### 11.3 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to hazards and hazardous materials that could result from the Project, and discusses components of the Project that would avoid or reduce those potential impacts.

### 11.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to hazards and hazardous materials if it would:

- A. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- B. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- D. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area;
- F. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- G. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Threshold of significance (g) regarding exposure of people or structures to wildland fire risk is included in Chapter 20, Wildfire, of this EIR, and therefore, not discussed in this chapter.

### 11.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

This Section contains the proposed revised and new policies and implementing programs from the Safety Element Update that would avoid or reduce significant CEQA-defined hazards. The Housing Element Update does not contain policies or implementing programs that specifically address these impacts.

New Safety Element Update policy and program language is shown in underline while deleted language is shown with ~~strike through~~.

Policy EHS 2.1 Enhance Public Awareness. Make hazard studies, data, maps, services, and related information more accessible to residents and include more robust and targeted outreach in vulnerable communities.

Policy EHS 2.2 Improve Information Base. Support scientific studies and other technical planning efforts that increase and refine the body of knowledge regarding hazardous conditions in Marin County.

Policy EHS-2.4 (Effective Emergency Access and Evacuation). Ensure that first responders have adequate emergency access routes and that County residents, businesses, workers, and visitors can effectively evacuate during or after a disaster.

Policy EHS-5.2 (Ensure Adequate Fire Protection). Ensure that adequate fire protection, including adequate evacuation routes, is provided in new development and when modifications are made to existing development.

Program EHS-2.1.a (Distribute Maps). Prepare Update regularly and make available to the public maps depicting evacuation routes and areas prone to environmental hazards.

Program EHS-2.4.c (Identify and Improve Deficient Evacuation Routes). Implement findings of the Marin Wildfire Protection Authority Evacuation Ingress-Egress Risk Assessment. Use the visual risk assessment and risk factors to identify and prioritize existing deficient evacuation routes. Improve evacuation routes based on the prioritization ranking, but also in consideration of improvements required for a transportation network which is resilient to flooding and inundation from sea level rise.

Program EHS-2.4.d (Create New Evacuation Routes). Identify and construct additional local evacuation routes in areas of high hazard concern or limited mobility.

Program EHS-2.4.e (Ensure Access to New Development). Require new development to include adequate roadway ingress/egress for emergency access and evacuation routes.

*[renumbered only]* Program EHS-~~23~~.3.g Reliability of Lifelines and Access (Evacuation) Routes. In cooperation with utility system providers, emergency management agencies, and others, assist in the development of strategies to reduce adverse effects of geologic hazards, especially fault surface rupture and landslides to critical public lifelines, and access (i.e., evacuation) routes in an emergency.

Program EHS-5.1.d (Identify Areas with Insufficient Evacuation Opportunities). Continue to collaborate with Marin Fire Agencies in the identification and mapping of areas with only one point of ingress or egress and roads that do not meet current emergency access and evacuation standards and the preparation of a program that prioritizes corrective actions.

As noted previously, the discussion of wildland fire is included in Chapter 20 of this EIR, Wildfire, which includes relevant proposed policies and programs that address that issue.

### 11.3.3 Impacts and Mitigation Measures

The following analysis is provided at a programmatic level consistent with the level of detail of the proposed Project.

**Impact 11-1: Project-Related Potential Impacts Due to Hazardous Materials Transport, Use, Storage, or Disposal.** *[Threshold of Significance (a)]* The primary land use permitted under the Housing Element Update is residential; therefore, it is not expected to involve the routine transport, use, storage, or disposal of hazardous materials to the extent that a significant public or environmental hazard would occur. The Safety Element Update would facilitate activities involving construction such as road improvements, creation of new evacuation routes or improvement of deficient routes and other access provisions, and possible retrofitting of County Buildings and critical facilities. These activities also typically would not involve the

routine transport, use, storage, or disposal of hazardous materials to the extent that a significant public or environmental hazard would occur.

*Construction Period Hazardous Materials– Applies to both Housing Element Update and Safety Element Update.* Future development facilitated by the Housing Element Update and the Safety Element Update would likely involve the intermittent transport, use, and disposal of potentially hazardous materials, including fuels and lubricants, paints, solvents, and other materials commonly used in construction and maintenance. During construction activities, any on-site hazardous materials that may be used, stored, or transported would also be subject to applicable local, State, and federal regulations that require standard protocols (as determined by the U.S. EPA, California Department of Health and Safety, and Marin County for maintaining health and safety.

*Post-Construction Period Hazardous Materials– Applies to both Housing Element Update and Safety Element Update.* Once construction activities are completed for a specific project, occasional transport, use, storage, or disposal of common hazardous substances such as fuel, paint, and solvents would be expected, such as for routine maintenance, but on a smaller scale than during construction. Such post-construction activities would be subject to applicable local, State, and federal regulations. Future residential uses would be expected to use typical household hazardous substances associated with residential uses (e.g., paint, cleaners) that may be generated, stored, transported, used, or disposed and would be subject to applicable local, State, and federal regulations; however, these future residential uses would be unlikely to involve routine transport, use, or disposal of hazardous materials, or result in hazardous emissions. In addition, the County operates a household hazard waste facility that accepts drop-off by residents of wastes such as electronic waste, household batteries, bulbs, household cleaning products, paint and related products, and personal care products, and other hazardous wastes.

Safety Element Update Policy EHS 2.1 Enhance Public Awareness, Policy EHS 2.2 Improve Information Base, and Program EHS-2.1.a Distribute Maps would support existing CWP Policy PS-4.1: Regulate and Reduce Hazardous Material Use to “Control the use and storage of hazardous materials to minimize their presence in, and potential dangers to, the community and environment.” These proposed policies and program, in conjunction with the existing CWP Policy, and implementation of adopted, standard procedures and regulations would ensure that hazardous materials impacts due to construction and post-construction use or maintenance of new housing facilitated by the Housing Element Update, and construction and/or maintenance of road or access improvements or County Building or critical facility retrofitting facilitated by the Safety Element Update would be ***less-than-significant***.

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**Impact 11-2: Significant Hazards Due to Reasonably Foreseeable Upset and Accident Conditions Involving Release of Hazardous Materials into the Environment.** [*Threshold of Significance (b)*] There is always a possibility that during new construction facilitated by both the Housing Element Update and the Safety Element Update construction workers, visitors, and/or other passers-by could encounter contamination or be exposed to existing spilled, leaked, or otherwise discharged hazardous materials or wastes (see Appendix F). Typically, a lending institution requires an environmental survey or records search of the site prior to a commercial loan to determine potential risk as part of the due diligence. A Phase I Environmental Site Assessment (Phase I ESA) is a tool used to investigate and report the current and past history and uses of a property; if any usage has contaminated the soil or groundwater; and related



areas of investigation. The American Society for Testing and Materials (ASTM) standards for conducting Phase I ESAs are designed within the scope of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to identify potential contamination that may impact a property and present an environmental risk or pose a liability for the current property owner or prospective purchaser. The Phase I ESA follows four steps: records review; site reconnaissance; interviews; and report preparation, including findings about the risk to human health or the environment associated with the proposed use of the property. The Phase I ESA may determine that additional investigation is necessary, in which case a Phase II ESA would likely be recommended. The Phase II ESA includes collecting environmental samples of soil, and sometimes soil vapor, groundwater, surface water for laboratory analysis.

The County Public Works Department, in its role as CUPA, maintains records of businesses that generate and/or use hazardous materials, and also sites that contain hazardous materials, which provides important information for planners in reviewing future development applications.

In addition, County Code Section 22.22.080 states: “F. Lots dedicated to affordable housing. Any required inclusionary lot shall be offered in a condition that is suitable for development, including appropriate access and services, consistent with sound community planning principles, and shall be devoid of contaminants and other hazardous wastes.”

Each future development proposal facilitated by the Project would be required to comply with all applicable, existing County-, regional-, and State-mandated site assessment, remediation, removal, and disposal requirements for soil, surface water, and/or groundwater contamination, as described in the “Regulatory Setting” (Section 11.2) above.

Safety Element Update Policy EHS 2.1 Enhance Public Awareness, Policy EHS 2.2 Improve Information Base, and Program EHS-2.1.a Distribute Maps would support existing CWP Policy PS-4.1: Regulate and Reduce Hazardous Material Use to “Control the use and storage of hazardous materials to minimize their presence in, and potential dangers to, the community and environment.” These proposed policies and program, in conjunction with the existing CWP Policy, and compliance with the requirements and common practices discussed above and in previous sections would prevent exacerbation of existing contamination or accidental release, and would ensure that this possible health and safety impact would be ***less-than-significant***.

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**Impact 11-3: Project-Related Potential Asbestos and PCB Exposure.** [*Threshold of Significance (b)*] Development under the Project could include the removal or disturbance of asbestos-containing material (ACM) and/or transformers during alteration, renovation, or demolition of existing structures, which could expose construction workers and the general public to friable asbestos and/or polychlorinated biphenyls (PCBs). BAAQMD regulations require notification of every demolition regardless of asbestos content. California Code of Regulations Title 8 – Cal/OSHA includes standards regulating exposure to asbestos in all construction work including demolition of structures. Proposed developments should coordinate with the Bay Area Air Quality Management District (BAAQMD) when required to determine if ACM and/or PCBs are present, in conformance with BAAQMD established protocols.

Ensuring proper identification and removal of ACM and PCBs requires development facilitated by the Project to comply with the requirements of applicable BAAQMD rules and regulations.

Project compliance with these standard State and BAAQMD procedures would ensure that any potential ACM and PCB exposure impacts from future development facilitated by the Project would be ***less-than-significant***.

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**Impact 11-4: Project-Related Potential Lead-Based Paint Exposure.** *[Threshold of Significance (b)]* Development under the Project could include the alteration, renovation, or demolition of existing structures containing lead-based paint, including paint that has delaminated (split into thin layers) or chipped from surfaces, resulting in airborne lead particles that could be released into the air. California OSHA (CalOSHA) regulations would apply, and each site-specific project would implement the following standard, mandatory procedures in accordance with those CalOSHA regulations:

- Notify the County’s Building and Safety Division prior to starting work, describing the nature, location, and schedule of the work;
- Post a sign at all work locations where lead containment is required, stating that lead-based paint abatement is in progress and public access is prohibited;
- Notify the tenant(s) where the lead-based paint abatement work will be performed on a residential property occupied by one or more tenants; and
- Notify the property owner when work on a residential project will disturb lead-based paint.

Lead abatement performance standards are included in the *Guidelines for Evaluation and Control of Lead-Based Paint Hazards* (U.S. Department of Housing and Urban Development). Accordingly, HEPA vacuums may be required for abrasive blasting, water blasting, scraping, or sanding. Burning, torching, and similar activities are prohibited. Following completion of lead-based paint abatement, all visible lead-based paint particles must be removed from the site.

The County may inspect lead-based paint abatement activities at any time during construction. These personnel are also responsible for addressing citizen complaints related to lead-based paint abatement activities and may issue a Notice of Violation, a Stop Work order, or a fine.

Project compliance with these State and BAAQMD procedures would ensure that any potential lead-based paint exposure impacts from future development facilitated by the Project would be ***less-than-significant***.

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**Impact 11-5: Potential for Hazardous Materials Near Schools.** *[Threshold of Significance (c)]* See the impact discussions above. Existing schools are located within one-quarter mile of some of the proposed sites for housing under the Housing Element Update; however, the land uses permitted under the Housing Element Update are primarily residential and are not expected to involve the routine transport, use, storage, or disposal of hazardous materials to that extent that a significant public or environmental hazard would occur. In addition, as discussed in “Project-Related Potential Impacts Due to Hazardous Materials Transport, Use, Storage, and Disposal” above, although future construction under the Project, including construction facilitated by the Safety Element Update, would likely involve the intermittent transport, use, storage, and disposal of potentially hazardous materials, including fuels and

lubricants, paints, solvents, and other materials commonly used in construction and maintenance, construction activities would be required to comply with applicable local, State, and federal regulations. In addition, the regulatory requirements described above (Section 11.2) would be implemented as applicable. Specific to schools, State regulations on the siting of hazardous materials facilities limit their location in proximity to schools; in addition, CEQA (Public Resources Code Section 21151.8, School Site Acquisition or Construction) and other State regulations impose restrictions on where new schools can be constructed. The impact of hazardous materials on schools from future development facilitated by the Project would be ***less-than-significant***.

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**Impact 11-6: Protocols for Government Code Section 65962.5 Sites.** [*Threshold of Significance (d)*] As discussed in Section 11.1.1(b), a review of the Cortese List data resources compiled pursuant to Government Code section 65962.5 indicates approximately four active sites and one site classified as “Certified/Operation & Maintenance” on the Department of Toxic Substance Control (DTSC) Hazardous Waste and Substances Site List;<sup>15</sup> 18 open sites on the Regional Water Quality Control Board (RWQCB) Leaking Underground Storage Tank Site List; and one active site on the RWQCB active Cease and Desist Order (CDO) and Cleanup and Abatement Order (CAO) list. Such sites are regulated by DTSC and/or the RWQCB because hazardous materials investigations and/or cleanup actions are planned, active, or have been completed at these sites (see Table 11-1 under “Setting,” above). Compliance with federal, State, regional, and local regulations (see “Regulatory Setting,” above) and completion of any mandatory site remediation activities identified by DTSC or RWQCB would reduce potential exposure to existing hazardous materials contamination and prevent exacerbation of existing contamination or accidental release. In addition, any restrictive covenants on the site would need to be amended or rescinded in order for the proposed site to be considered suitable for residential use.

Project compliance with these site-specific mitigation protocols administered by DTSC, RWQCB, and other jurisdictional agencies (including the Marin County CUPA) would ensure that any potential contamination impacts from future development facilitated by the Project would be ***less-than-significant***.

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**Impact 11-7: Potential Airport Hazards.** [*Threshold of Significance (e)*] As discussed in Section 11.1.2, the Marin County Airport Land Use Commission (ALUC) has authority to review future individual development applications in the Gness Airfield Referral Area Boundary, which is defined as two miles from the future boundary of the airport and is shown on Figure 11.1 above. The Gness Airfield Airport Land Use Plan (ALUP) contains policies regarding proposed development and land use in the vicinity of Gness Airfield, which would be used for determining whether or not a future individual development would be consistent with the ALUP. In addition, the Federal Aviation Administration’s (FAA) Federal Aviation Regulations (FAR) Part 77 provides detailed standards related to imaginary surfaces for structures proposed in areas where structure height may constitute a safety hazard. Review of future individual development applications proposed within the ALUP Referral Area Boundary would ensure that impacts

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<sup>15</sup>None of these five sites is on or near a proposed housing site.

related to land use compatibility and safety would be less-than-significant. (See Chapter 15, Noise, of this EIR for a discussion of potential airport noise impacts.)

Because private airports are not required to prepare land use plans and the Marin County ALUC authority is limited to Gness Airfield, the potential exists for airport safety hazards from future development applications proposed within two miles of the four private air facilities in the county: San Rafael Airport, San Rafel Heliport, Commodore Center Heliport, and Commodore Center Seaplane Base. However, California Public Utilities Commission Section 21659(a) states: “No person shall construct or alter any structure or permit any natural growth to grow at a height which exceeds the obstruction standards set forth in the regulations of the Federal Aviation Administration (FAA) relating to objects affecting navigable airspace contained in Title 14 of the Code of Federal Regulations, Part 77, Subpart C, unless the Federal Aviation Administration has determined that the construction, alteration, or growth does not constitute a hazard to air navigation or would not create an unsafe condition for air navigation.”<sup>16</sup> Notification to the FAA would therefore be required for individual proposed structures that would exceed this airspace surface. FAA review and issuance of a determination that a proposed structure would not be a hazard to air navigation, which could include factors other than height, such as flight direction and trajectory, and project compliance with any conditions set forth in such FAA determinations, would ensure that the structure would not be an air safety hazard.

Project compliance with FAA protocols would ensure that any potential airport hazard impacts from future development facilitated by the Project would be ***less-than-significant***.

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**Impact 11-8: Impacts Related to Adopted Emergency Response Plans or Emergency Evacuation Plans.** [*Threshold of Significance (f)*] As discussed in Section 11.1.3 above, as part of the County’s evacuation planning and response efforts, the entire county has been divided into individual evacuation zones. In addition, the Safety Element Update includes the following proposed policies: Policy EHS 2.1 Enhance Public Awareness, Policy EHS 2.2 Improve Information Base, Policy EHS-2.4 (Effective Emergency Access and Evacuation) and Policy EHS-5.2 (Ensure Adequate Fire Protection), which would provide for adequate access for first responders and for adequate evacuation routes for residents, businesses, workers, and visitors. Related proposed implementation programs include Program EHS-2.1.a (Distribute Maps), Program EHS-2.4.c (Identify and Improve Deficient Evacuation Routes), Program EHS-2.4.d (Create New Evacuation Routes), Program EHS-2.4.e (Ensure Access to New Development), Program EHS-23.3.g Reliability of Lifelines and Access (Evacuation) Routes, and Program EHS-5.1.d (Identify Areas with Insufficient Evacuation Opportunities) would support these access and evacuation policies. These policies and programs are discussed in more detail in Chapter 20, Wildfire, of this EIR.

Future housing development resulting from the Project would be required to comply with all applicable County, County Fire Department, and local fire districts, consistent with the California Fire Code, as amended by the County, and the provisions of Marin County Code Title 16 (Fire)

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<sup>16</sup>The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. (Federal Aviation Administration, “Obstruction Evaluation / Airport Airspace Analysis (OE/AAA),” <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>, accessed 7/14/22.

and County Development Code Section 22.16.030 (General Standards). Standards regarding roadway width and grade, pavement, driveway specifications, vertical clearance, and access connections would be subject to review by County Fire prior to individual project approval. The Project is proposing sites where development has already occurred and roadway infrastructure currently exists. Individual future applications would be subject to Fire Department review and would be required to comply with County Fire and California Fire Code standards.

Project compliance with these standards would ensure that any potential impacts on adopted emergency response plans or emergency evacuation plans from future development facilitated by the Project would be ***less-than-significant***. Further details are included in Chapter 20, Wildfire, of this EIR.

### **Cumulative Hazards and Hazardous Materials Impacts**

Future cumulative development within the county, including the 11 incorporated cities and towns and the unincorporated areas, would be subject to the same Federal, State, and County CUPA regulations and standards, as discussed above in Section 11.2, Regulatory Setting, and described in Impact 11-1, Impact 11-2, Impact 11-3, Impact 11-4, Impact 11-5, Impact 11-6, Impact 11-7, and Impact 11-8. Because of the applicable laws, adopted performance standards, and uniform protocols, future cumulative development would create minimal risk from hazards and hazardous materials. For all potential exposure pathways other than transport of hazardous waste outside the county, potential impacts would be limited to the particular development site and its immediate vicinity. Therefore, future potential development facilitated by the Project would not make a cumulatively considerable contribution to any significant cumulative impact with respect to hazards and hazardous materials, and this impact would be ***less-than-significant***.

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## 12. HYDROLOGY AND WATER QUALITY

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Hydrology and Water Quality. <i>Would the project:</i></b>				
a) <i>Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?</i>			X	
b) <i>Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?</i>			X	
c) <i>Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:</i>				
i) <i>result in a substantial erosion or siltation on- or off-site;</i>			X	
ii) <i>result in a substantial erosion or siltation on- or off-site substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;</i>			X	
iii) <i>result in a substantial erosion or siltation on- or off-site substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; or</i>			X	
iv) <i>impede or redirect flood flows?</i>			X	
d) <i>In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?</i>			X	
e) <i>Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?</i>			X	

This chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts.

<sup>1</sup>State CEQA Guidelines, Appendix G, item X (a through e).]

## 12.1 ENVIRONMENTAL SETTING

### 12.1.1 Hydrologic Setting

Marin County is bordered by the Pacific Ocean on the west and San Francisco Bay and San Pablo Bay on the east. More than two-thirds of the land in the county has been preserved as park lands by Federal, State, and local governments. Elevations in these diverse landforms range from sea level at the Bay and Ocean margins to more than 2,500 feet along Mount Tamalpais.<sup>2</sup> The county has a mild Mediterranean climate that is characterized by long dry summers and rainy winters. Rainfall can average between 30 to 61 inches per year. Coastal fog is common, especially in late summer when it provides an important source of precipitation.<sup>3</sup>

Marin County includes 14 watersheds, as shown on Figure 12-1, Marin County Watersheds: Bolinas Lagoon, Estero Americano, Gallinas Creek, Miller Creek, Novato Creek, Point Reyes National Seashore Creeks, Richardson Bay, Ross Valley, Rush Creek, San Antonio Creek, San Rafael Creek, Southern Coastal Creeks, Stemple Creek, and Tomales Bay/Lagunitas. Much of the development in the county is in the east in the City Centered Corridor and the Baylands Corridor. The major watersheds are bisected by streams that enter San Pablo and San Francisco Bays to the east and south, and Tomales Bay, the Pacific Ocean, and Bodega Bay to the west.<sup>4</sup>

In the east, Miller Creek, Gallinas Creek, San Rafael Creek, and Novato Creek flow eastward from semi-rural headwaters through urban areas and tidal wetlands into San Pablo Bay. Corte Madera Creek and Corte Madera del Presidio flow southeastward from steep hillside headwaters through urbanized valleys before discharging into San Pablo Bay and Richardson Bay, respectively. Tomales Bay, in the west county, is one of the major estuaries on the Pacific Coast of California. Lagunitas Creek flows from headwaters on the north slope of Mount Tamalpais to the southern tip of Tomales Bay. Olema Creek flows northwest along the San Andreas Fault and discharges into Lagunitas Creek near its mouth. Walker Creek flows north-northwest and discharges into Tomales Bay. On the southern coast, Redwood Creek flows from Mount Tamalpais through Muir Woods National Monument and discharges into the Pacific Ocean at Muir Beach.<sup>5</sup>

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<sup>2</sup>Marin Countywide Plan, "Hydrology and Water Quality Background Report," updated November 2005, p. 23.

<sup>3</sup>Marin County Community Development Agency, Planning Division, Marin County Watershed Management Plan Administrative Draft, April 2004, p. 4.

<sup>4</sup>Marin County Stormwater Pollution Prevention Program, Storm Water Resource Plan Functionally Equivalent Document, September 2017, p. 3-1; <https://www.marinwatersheds.org/>, accessed 8/4/22; Marin County Watershed Management Plan Administrative Draft, p. 1.

<sup>5</sup>San Francisco Bay Regional Water Quality Control Board, Watershed Management Initiative, "3.4. Marin Watershed Management Area," [https://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/watershed/WMI/watershedmanagement.shtml](https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/watershed/WMI/watershedmanagement.shtml), accessed 8/5/22.





**Figure 12.1 - Marin County Watersheds**

### 12.1.2 Water Quality

A. Stormwater Runoff. During periods of rain, water can flush sediment, pollutants, trash, and litter from urbanized areas into the storm drain system, where they are discharged directly to surface waters. This urban runoff can contribute significant quantities of total suspended solids, heavy metals, petroleum hydrocarbons, and other pollutants to surface waters. Cities, towns, and unincorporated communities in Marin County typically have storm drain systems designed to collect and convey surface runoff water that is discharged to creeks, which, as discussed above, ultimately discharge to San Francisco Bay, San Pablo Bay, San Rafael Bay, Richardson Bay, Tomales Bay, or directly to the Pacific Ocean.<sup>6</sup>

The Marin Countywide Stormwater Pollution Prevention Program (MCSTOPPP), prepared in 1993, is comprised of Marin's 11 cities and towns, the County of Marin, and the Marin County Flood Control and Water Conservation District. The goals of the MCSTOPPP are to prevent stormwater pollution, protect and enhance water quality in creeks and wetlands, preserve beneficial uses of local waterways, and comply with State and Federal regulations. All MCSTOPPP members are co-permittees of the National Pollutant Discharge Elimination System (NPDES) General Permit for Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer System (MS4s) and are required to implement measures to reduce the discharge of pollutants from construction sites, areas of new development, and areas of significant redevelopment, including post-construction stormwater runoff control.

*Construction Period Requirements.* Proposed development or redevelopment is required to meet the NPDES "E.10" construction stormwater requirements and submit for County review and written approval of an erosion and sediment control plan that contains: (1) description of the proposed project and soil disturbing activity; (2) site specific construction-phase best management practices (BMPs); (3) rationale for selecting the BMPs; and (4) a list of applicable outside agency permits associated with the soil disturbing activity, such as Construction General Permit (CGP),<sup>7</sup> Clean Water Act Section 404 Permit, Clean Water Act Section 401 Water Quality Certification, and/or Streambed/Lake Alteration Agreement (1600 Agreements). The erosion and sediment control plan is required to comply with County Code Section 24.04.625, "Erosion and sediment control," and include pollution prevention measures during the construction phase as well as final stabilization control measures. Erosion control BMPs may include, but are not limited to, scheduling and timing of grading activities, timely revegetation of graded areas, use of hydroseed and hydraulic mulches, and installation of erosion control blankets. Sediment control may include properly sized detention basins, dams, or filters to reduce entry of suspended sediment into the storm drain system and watercourses, and installation of construction entrances to prevent tracking of sediment onto adjacent streets. Pollution prevention practices may include designated washout areas or facilities, control of trash and recycled materials, covering of materials stored on-site, and proper location of and

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<sup>6</sup>County of Marin Community Development Agency, Marin Countywide Plan Update Final Environmental Impact Report, November 2007, p. 4.5-3; [https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/county-wide-plan/cwp\\_eir/cwpupdatefeir1107.pdf](https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/county-wide-plan/cwp_eir/cwpupdatefeir1107.pdf), accessed 9/6/22.

<sup>7</sup>A Storm Water Pollution Prevention Plan (SWPPP) developed pursuant to the State's Construction General Permit (CGP) may substitute for the County erosion and sediment control plan for projects where a SWPPP is developed and meets County standards for an erosion and sediment control plan.

maintenance of temporary sanitary facilities. The combination of BMPs used, and their execution in the field, must be customized to the site using up-to-date standards and practices.

Projects disturbing more than one acre of ground are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) that includes specifications for Best Management Practices (BMPs) to be implemented to control contamination of surface flows and the potential discharge of pollutants from commencement of construction through project completion. The SWPPP document itself remains on-site during construction. After completion of the project, the owners are required to submit a Notice of Termination to the RWQCB to indicate that construction is completed.

*Post-Construction Requirements.* Proposed development or redevelopment is required to comply with Marin County post-construction stormwater requirements, per County Code Section 24.04.627, "Permanent stormwater controls for new and redevelopment." These requirements provide for removal of sediment and other pollutants by controlling flow rates and/or volume of stormwater runoff from added and/or replaced impervious surfaces with the aim of mimicking pre-project site hydrology. Final selection and design of controls are determined by the Marin County Public Works Department, in general accordance with criteria established or recommended by federal, state, and local agencies, and where required by the Marin County by the BASMAA Post Construction Manual.<sup>8</sup> The preferred control measure is to retain drainage ways above ground and in as natural a state as possible or other biological methods such as bioretention areas.

For projects creating and/or replacing between 2,500 square feet and 5,000 square feet of impervious surface and single family home projects that are not part of a larger plan of development, at least one of the following site design measures must be implemented and must show the decrease in runoff from the site: (1) stream setbacks and buffers; (2) soil quality improvement and maintenance; (3) tree planting and preservation; (4) rooftop and impervious area disconnection; (5) porous pavement; (6) green roofs; (7) vegetated swales; and (8) rain barrels and cisterns.

Projects creating or replacing 5,000 square feet or more of impervious surface are required to: (1) minimize the area of new roofs and paving; (2) use pervious surfaces instead of paving where feasible to allow runoff to infiltrate the underlying soil; (3) capture remaining runoff from impervious areas for re-use or otherwise treat via bioretention; and (4) incorporate pollutant source control best management practices into site design.

In addition, where required by the NPDES "E.12" stormwater permit provisions or otherwise deemed appropriate by the Marin County Public Works Department and based on the nature

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<sup>8</sup>MCSTOPPP provides resources regarding post-construction requirements and low impact development resources, including the BASMAA Post Construction Manual, for project applicants, developers, architects, engineers, and other involved or interested parties at its web site: <https://mcstoppp.org/2020/03/new-and-redevelopment/>.

and extent of the project, a stormwater control plan (SCP) following BASMAA Post Construction Manual templates would be required. The SCP requirement is in addition to erosion and sediment control plan requirements discussed above as further described in County Code Section 24.04.625.

Chapter 19, Utilities and Service Systems, of this EIR describes existing and recommended stormwater runoff and storm drainage facilities in the Project area.

**B. Nearby Water Bodies.** Under the Federal Clean Water Act, the State Water Resources Control Board is required to report on the condition of its surface water quality. Water bodies with pollutants that exceed protective water quality standards are placed on the State's 303(d) List of Water Quality Limited Segments (also known as the list of impaired water bodies). The list identifies the pollutant causing impairment and establishes a schedule for developing a control plan to address the impairment, called a Total Maximum Daily Load (TMDL). The TMDL serves as the means to attain and maintain water quality standards for the impaired water body.<sup>9</sup> Several waterbodies in the county are included on the State's 303(d) list.<sup>10</sup>

Category 4A Criteria refer to water segments where all its 303(d) listings are being addressed and at least one of the listings is being addressed by a U.S. Environmental Protection Agency (EPA) approved TMDL. The following are listed under Category 4A: Arroyo Corte Madera Del Presidio, Chicken Ranch Beach, China Camp Beach, Corte Madera Creek, Coyote Creek, Gallinas Creek, McNears Beach, Miller Creek, Millerton Point, Novato Creek, Olema Creek subwatershed (tributary to Lagunitas Creek), San Rafael Creek, and San Antonio Creek.

Category 5 Criteria refer to water segments where standards are not met and a TMDL is required, but not yet completed. The following are listed under Category 5: San Francisco Bay, Bon Tempe Reservoir, Golden Hinde Beach, Lagunitas Creek, Nicasio Reservoir, Paradise Cove Beach, Richardson Bay, Soulajule Reservoir, Tomales Bay, Walker Creek, San Pablo Bay, and Petaluma River.

A table showing each listed waterbody and associated pollutant is included as Appendix G to this EIR.

### **12.1.3 Groundwater Conditions**

The county is located in the San Francisco Bay Hydrologic Region, which has 28 identified groundwater basins.<sup>11</sup> There are four groundwater basins in the county:

1. Sand Point Area – a 2.2-square-mile basin just south of the town of Dillon Beach, bounded to the west, south and southwest by Tomales Bay;

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<sup>9</sup>TMDL is a calculation of the maximum amount of a pollutant that a water body can receive and still safely meet water quality standards.

<sup>10</sup>State Water Resources Control Board, 2020-2022 California Integrated Report (Clean Water Act Section 303(d) List and 305(b) Report), [https://www.waterboards.ca.gov/water\\_issues/programs/water\\_quality\\_assessment/2020\\_2022\\_integrated\\_report.html](https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022_integrated_report.html), accessed 5/26/22, 8/4/22.

<sup>11</sup>Department of Water Resources, California's Groundwater, Bulletin 118, Update 2003.

2. Novato Valley – a 32-square-mile basin immediately west of San Pablo Bay and north of San Rafael;
3. San Rafael Valley – a 1.4-square-mile basin bounded to the east by San Rafael Bay, between San Pablo Bay to the north and San Francisco Bay to the south; and
4. Ross Valley – a 2.8-square-mile basin bounded to the east by San Francisco Bay and to the north by Corte Madera Creek.

None of these groundwater basins have been designated a medium- or high-priority basin by the California Department of Water Resources. The Novato Valley groundwater basin is a Low Priority Groundwater Basin, and the other three are Very Low Priority. The Sustainable Groundwater Management Act (SGMA) requires medium- and high-priority basins to develop groundwater sustainability agencies (GSAs), develop groundwater sustainability plans (GSPs) and manage groundwater for long-term sustainability.<sup>12</sup>

The Novato, San Rafael Valley, and Ross Valley groundwater basins are at least partially within the Marin Municipal Water District (MMWD) service area, but according to the MMWD, groundwater is not currently or planned to be used as a water supply source.<sup>13</sup> The Novato Valley groundwater basin underlies the North Marin Water District (NMWD) service area, but according to the NMWD, groundwater is not currently or planned to be used as a water supply source.<sup>14</sup> The Point Reyes community water supply comes from two groundwater wells located behind the former Coast Guard Housing facility in Point Reyes Station and one groundwater well about a mile and a half east of Point Reyes Station.<sup>15</sup> The Stinson Beach County Water District (SBCWD) sources for water supply are primarily groundwater wells.<sup>16</sup> The Muir Beach Community Services District sources for water supply include two service wells.<sup>17</sup> The Sand Point, Novato, San Rafael Valley, and Ross Valley groundwater basins are not within the service areas for Point Reyes, the SBCWD, or the Muir Beach Community Services District.

#### **12.1.4 Flooding and Flood Hazards Resulting from Erosion, Siltation, or Release of Pollutants**

The following section provides the setting for potential flooding and flood hazard impacts resulting from erosion, siltation, or release of pollutants, which are discussed later in Section 12.3.3, “Impacts and Mitigation Measures” and apply to threshold of significance (d).

**A. Flood Hazard Mapping.** The Federal Emergency Management Agency (FEMA) develops Flood Insurance Rate Maps (FIRMs) that determine flood risks in communities. These maps

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<sup>12</sup>California Department of Water Resources, Basin Prioritization, <https://water.ca.gov/programs/groundwater-management/basin-prioritization>, accessed 7/27/22.

<sup>13</sup>Marin Municipal Water District, 2020 Urban Water Management Plan for Marin Municipal Water District, June 2021, p. 54.

<sup>14</sup>North Marin Water District, 2020 Urban Water Management Plan for North Marin Water District, June 2021, p. 52.

<sup>15</sup>North Marin Water District, “West Marin Water,” <https://nmwd.com/your-water/west-marin-water/>, accessed 8/6/22.

<sup>16</sup>Stinson Beach County Water District, “Stinson Beach County Water District Overview,” <http://stinson-beach-cwd.dst.ca.us/overview.html>, accessed 8/6/22.

<sup>17</sup>Muir Beach Community Services District, <https://muirbeachcsd.com/water/>, accessed 8/6/22.

identify Special Flood Hazard Areas (SFHAs) that are subject to inundation by the 1% annual chance flood (e.g., 100-year flood event or base flood). Figure 12-2, Flood Hazard Areas, shows the areas in the county that have been identified by FEMA as susceptible to flood. Figure 12-3, Housing Sites Flood Hazards, shows the candidate housing sites in relation to the flood hazard areas.

In the east county, particularly closer to coastal areas, there are many areas designated as flood hazard areas. There are several areas in the interior of the county, particularly around the larger lakes and reservoirs and the creeks feeding them, that are designated as flood hazard areas. In the west county, there are also several areas designated as flood hazard areas.

Although most of the candidate housing sites are not located in flood hazard areas, several sites or portions of sites are, including sites in and around Tomales Bay/Inverness, Point Reyes Station, Olema and Olema Creek, Stinson Beach, Nicasio Valley, the Novato area, the St. Vincent area, along Lucas Valley Road near Miller Creek, along North San Pedro Road in the vicinity of Gallinas Creek, along Sir Francis Drake Boulevard in the Kentfield/Greenbrae area, in Manzanita, and in the Marin City/Sausalito area.<sup>18</sup>

Eight flood control zones have been created by the County's Flood Control and Water Conservation District to address specific flooding problems – Zones 1-7, 9 and 10. These zones are:<sup>19</sup>

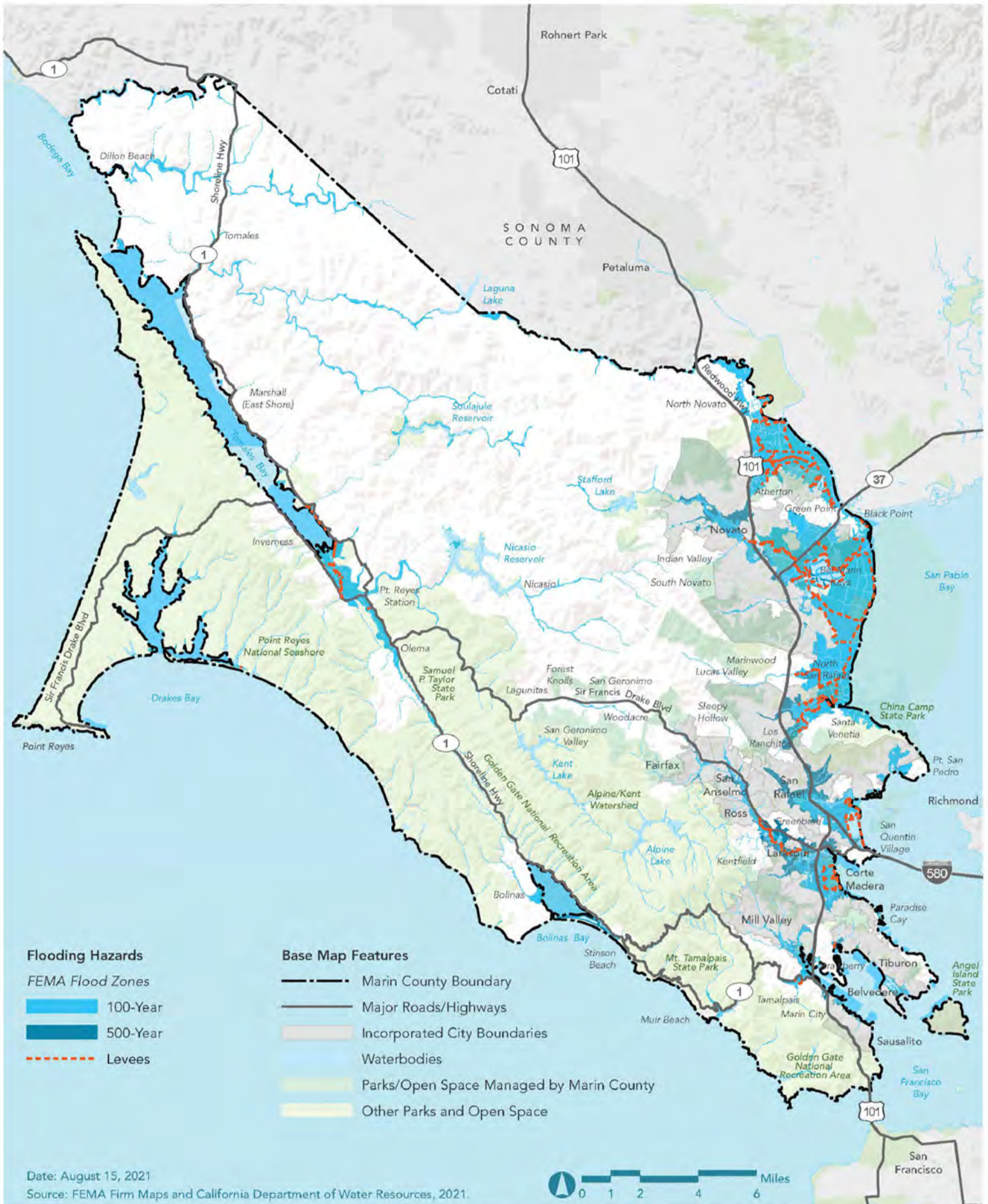
1. Zone 1 – Novato, which covers over 45 square miles and includes the City of Novato and portions of unincorporated county in Indian Valley, Bel Marin Keys, Green Point, Black Point, Loma Verde, and western Novato;
2. Zone 3<sup>20</sup> – Richardson Bay, which covers over 13 square miles and includes the City of Mill Valley; the unincorporated communities of Marin City, Alto, Sutton Manor, Almonte, Tamalpais Valley, Homestead Valley; and portions of Strawberry Point;
3. Zone 4 – Bel Aire, which covers 0.85 square miles and includes parts of the Town of Tiburon and Bel Aire and Strawberry Circle;
4. Zone 5 – Stinson Beach, which covers 2.28 square miles of entirely unincorporated lands in the community of Stinson Beach;
5. Zone 6 – San Rafael Meadows, which covers 0.16 square miles entirely within the City of San Rafael;

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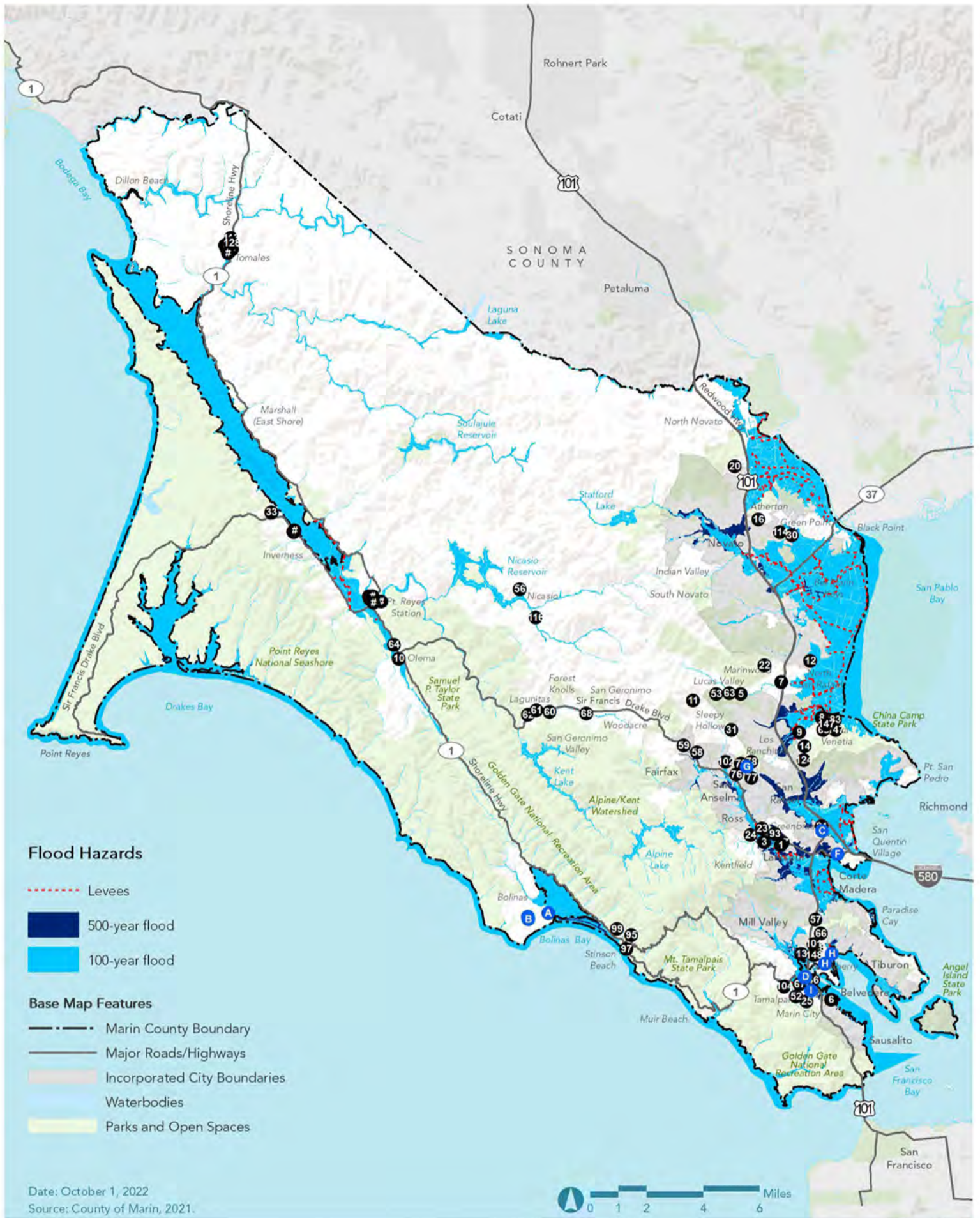
<sup>18</sup>Google Earth with “sites inventory” KML and FEMA National Flood Hazard Layer, accessed 8/2/22.

<sup>19</sup>Marin Watershed Program, Flood Control Zones, <https://www.marinwatersheds.org/flood-protection/flood-control-zones#undefined1>, accessed 8/4/22.

<sup>20</sup>Although there were studies to form Zones 2 and 8 in the past, there was no recommendation to create any new zones; therefore, Zones 2 and 8 were not included in the Flood Control District's workplan. Marin County Flood Control and Water Conservation District, “Flood control zones,” <https://marin-watershed-program-ca.proudcity.com/flood-control-zones/>, accessed 9/4/22.



**Figure 12.2 - Flood Hazard Areas**



**Figure 12.3 Housing Sites Flood Hazards**



6. Zone 7 – Santa Venetia, which covers 0.42 square miles in entirely unincorporated lands in the community of Santa Venetia;
7. Zone 9 – Ross Valley, which covers over 29 square miles, including the towns of Fairfax, San Anselmo, Ross and Larkspur as well as the unincorporated communities of San Anselmo, Fairfax, Kentfield, and Greenbrae; and
8. Zone 10 – Inverness, which was formed to address impacts of the January 1982 storm on the west shore of Tomales Bay and the east flank of the Inverness Ridge; the Zone is largely dormant but can be activated as needed.

B. Tsunamis. A tsunami is a series of waves generated in a body of water by a rapid disturbance, such as a submarine seismic, volcanic, or landslide event, that vertically displaces water. Tsunamis affecting the Bay Area can result from offshore earthquakes within the Bay Area or from distant events. Due to their location and the quality of the built environment, some Marin County communities may be vulnerable to tsunamis.

According to the 2018 Local Hazard Mitigation Plan, the following areas have been identified as susceptible to risk of inundation from tsunami:<sup>21</sup>

1. Almonte
2. Belvedere and Tiburon
3. Black Point
4. Dillon Beach
5. Kentfield
6. Mill Valley
7. Muir Beach
8. Paradise Cay
9. Point San Pedro
10. San Quentin
11. San Rafael
12. Sausalito (includes parts of Marin City)
13. Stinson Beach
14. Strawberry

Although most of these areas do not include any candidate housing sites, several sites or portions of sites are located in the following tsunami inundation areas: Almonte, Stinson Beach, and Strawberry.<sup>22</sup>

C. Seiches. A seiche is a standing wave that oscillates in a body of water contained within a partially or completely enclosed basin. A seiche is initiated by an event within the basin, such as wind, surface or subsurface landslide, or earthquake.

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<sup>21</sup>Marin County Multi-Jurisdiction Local Hazard Mitigation Plan, 2018, p. 71.

<sup>22</sup>Marin County Housing & Safety Elements, "Map Atlas: Candidate Housing Sites and Existing Conditions and Constraints," <https://www.marincountyatlas.org/hazards>; County of Marin, MarinMap Map Viewer, <https://www.marinmap.org/Html5Viewer/Index.html?viewer=smmdataviewer>; Google Earth with "sites inventory" KML; accessed 7/29/22.

Seiches could cause damage to structures on or adjacent to the waterbody where they occur. In Marin County, the largest waterbodies likely to be susceptible to a seiche are the lakes and reservoirs associated with Alpine Dam, Bon Tempe Dam, Lagunitas Dam, Phoenix Dam, Peters Dam (Kent Lake), Nicasio Dam, and Soulajule Dam, which are managed by the Marin Municipal Water District; the dam at Stafford Lake on Novato Creek, which is managed by the North Marin Municipal Water District; and the private dam at Big Rock Ranch, which is owned by Skywalker Properties.<sup>23</sup>

Although there are no maps depicting the extent of flooding that may result from seiches, a seiche occurring on any of these waterbodies would not be more severe than the flooding caused by failure of the respective dam and would in all likelihood be much less severe. Because the water released during a seiche would be likely to travel along the same route as water from dam failure, review of the dam failure inundation areas provides a conservative overview of the potential effects of a seiche to reach downstream properties and structures.

Most of the candidate housing sites are not located in dam inundation areas and therefore would not be at risk during a seiche. Also, no housing sites proposed under the Project would be located in the dam inundation areas for Alpine Dam, Bon Tempe Dam, Lagunitas Dam, Soulajule Dam, and the dam at Big Rock Ranch. However, housing sites or parts of sites are proposed to be located in the inundation areas of the following dams: Phoenix Dam, Peters Dam (Kent Lake), Nicasio Dam, and the dam at Stafford Lake.<sup>24</sup>

## 12.2 REGULATORY SETTING

### 12.2.1 Federal Regulations and Laws

**Clean Water Act.** The Clean Water Act (CWA) is the primary federal law that governs and authorizes water quality control activities by the U.S. Environmental Protection Agency (EPA) and the states to protect the quality of the nation's surface waters, including lakes, rivers, aquifers, groundwater, and coastal areas. Under the CWA, the EPA sets national standards and effluent limitations, and delegates many regulatory responsibilities to the California State Water Resources Control Board (SWRCB). Section 303(d) of the CWA requires states to (1) develop a list of water bodies that do not meet water quality standards, (2) establish priority rankings for waters on the list, and (3) develop action plans, called Total Maximum Daily Loads (TMDLs), to improve water quality. The list of impaired water bodies is revised typically every two years. The CWA was amended in 1972 to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit.

**National Pollutant Discharge Elimination System.** The National Pollutant Discharge Elimination System (NPDES) permit program was established by the CWA to regulate municipal and industrial discharges to surface waters of the United States, including discharges from

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<sup>23</sup>Marin County Multi-Jurisdiction Local Hazard Mitigation Plan, 2018, p. 38.

<sup>24</sup>Marin County Housing & Safety Elements, "Map Atlas: Candidate Housing Sites and Existing Conditions and Constraints," <https://www.marincountyatlas.org/hazards>; County of Marin, Marin GeoHub, "Dam Inundation," <https://gisopendata.marincounty.org/datasets/MarinCounty::dam-inundation/explore?location=38.016807%2C-122.674500%2C10.98>; State of California Department of Water Resources, Division of Safety of Dams (DSOD) "California Dam Breach Inundation Maps" GIS site: <https://fmds.water.ca.gov/maps/damim/>; Google Earth with "sites inventory" KML; accessed 8/3/22.

Municipal Separate Storm Sewer Systems (MS4s). Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and urban stormwater runoff. NPDES permits identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

Under the NPDES program, all facilities that discharge pollutants into waters of the United States are required to obtain an NPDES permit. Requirements for stormwater discharges are also regulated under this program. In California, the NPDES permit program is administered by the SWRCB through the nine Regional Water Quality Control Boards (RWQCBs). The County of Marin and all of Marin's municipalities are subject to the conditions of the regulations in the National Pollutant Discharge Elimination System (NPDES) General Permit for Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer System (MS4s), Water Quality (WQ) Order 2013-0001-DWQ NPDES No. CAS000004 as amended.

**U.S. Environmental Protection Agency.** In 1990 the EPA published final regulations that establish stormwater permit application requirements. The regulations, also known as Phase I of the NPDES program, provide that discharges of stormwater to waters of the United States from construction projects that encompass five or more acres of soil disturbance are effectively prohibited unless the discharge complies with an NPDES permit. Phase II of the NPDES program expands the requirements by requiring operators of small Municipal Separate Storm Sewer Systems (MS4s) in urbanized areas and small construction sites to be covered under an NPDES permit, and to implement programs and practices to control polluted stormwater runoff.

**National Flood Insurance Act of 1968 (as amended) and Flood Disaster Protection Act of 1973 (as amended).** In response to increasing losses from flood hazards nationwide, the United States Congress passed the National Flood Insurance Act of 1968, which established the National Flood Insurance Program (NFIP). The 1968 Act provided for the availability of flood insurance within communities that were willing to adopt floodplain management programs to mitigate future flood losses. The Act also required the identification of all floodplain areas within the United States and the establishment of flood-risk zones within those floodplain areas.

As a result of the Hurricane Agnes flooding along the East coast in 1972, the 1968 Act was expanded by the Flood Disaster Protection Act of 1973, in part to increase the awareness of floodplain mapping needs throughout the country. The 1973 Act added the mandatory flood insurance purchase requirement for individuals, businesses, and others buying, building, or improving property located in identified areas of special flood hazards within participating communities as a prerequisite for receiving any type of direct or indirect federal financial assistance when the building or personal property is the subject of or security for such assistance. The Federal Insurance Administration of the Federal Emergency Management Agency (FEMA) administers the NFIP.

**Federal Emergency Management Agency (FEMA).** FEMA prepares Flood Insurance Rate Maps (FIRMs) that depict the spatial extent of Special Flood Hazard Areas (SFHAs) and other features related to flood risk assessment. FEMA is responsible for maintaining the FIRMs as new scientific and technical data concerning flood risks become available.

**Federal Disaster Mitigation Act of 2000.** The Disaster Mitigation Act of 2000 authorizes the Federal Emergency Management Agency (FEMA) to set mitigation planning requirements for state, local, and Indian Tribal governments as a condition of mitigation grant and disaster assistance, and requires close coordination of mitigation planning and implementation efforts between FEMA and jurisdictions.

### 12.2.2 State Regulations and Laws

**Porter-Cologne Water Quality Control Act.** The Porter-Cologne Act is the principal State law governing water quality regulation in California, and applies to surface waters, wetlands, and groundwater, as well as regulation of both point and nonpoint sources of pollution. The Porter-Cologne Act implements provisions of the CWA, such as the National Pollution Discharge Elimination System (NPDES) permitting program, through the State Water Resources Control Board and nine Regional Water Quality Control Boards, which issue permits for point source discharges.

The Porter-Cologne Water Quality Act also authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals. Other State agencies with jurisdiction over water quality regulation in California include the California Department of Health Services (DHS) (for drinking water regulations), the California Department of Pesticide Regulation, and the Office of Environmental Health and Hazard Assessment (OEHHA).

**State Water Resources Control Board.** In California, the State Water Resources Control Board (SWRCB) has broad authority over water quality control issues and water rights. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the State by the federal government under the CWA.

In addition to municipal and industrial activities, the SWRCB regulates construction activities that disturb one or more acres of land that could impact hydrologic resources. These activities must comply with the SWRCB Construction General Permit (CGP) (2009-0009-DWQ) as amended by 2010-0014-DWQ and 2012-006-DWQ, which requires that applicants demonstrate conformance with applicable best management practices (BMPs) and prepare a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must contain a site map that shows the construction site perimeter; existing and proposed buildings, lots, roadways, stormwater collection, and discharge points; general topography both before and after construction; and drainage patterns across the project site. The SWPPP must also list BMPs that will be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for nonvisible pollutants if there is a failure of the BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

**State Department of Water Resources.** The Department of Water Resources (DWR) is responsible for the management and regulation of water usage, including the delivery of water to two-thirds of California's population through the State Water Project, the nation's largest state-built water development and conveyance system. Working with other agencies and the public, DWR develops strategic goals, and near-term and long-term actions, to conserve, manage, develop, and sustain California's watersheds, water and groundwater resources, and management systems. In addition, DWR also works to prevent and respond to floods, droughts, and catastrophic events that would threaten public safety, water resources and management

systems, the environment, and property. The State Water Resources Control Board and DWR are to the two state agencies responsible for implementing the Sustainable Groundwater Management Act.

### 12.2.3 Regional Regulations

**San Francisco Regional Water Quality Control Board (Region 2).** The San Francisco Regional Water Quality Control Board Region 2 (SFRWQCB) regulates stormwater quality under authority of both the Federal Clean Water Act and the Porter-Cologne Act. The SFRWQCB issues NPDES permits to dischargers of municipal and industrial stormwater runoff and operators of large construction sites. SFRWQCB staff perform an annual performance review and evaluation of stormwater management programs and NPDES compliance activities and also protect groundwater through its regulatory and planning programs.

On February 5, 2013, the State Water Resources Control Board adopted a General Permit for Discharge of Stormwater from Small MS4s (Phase II) that became effective on July 1, 2013. The following municipalities within Region 2 are covered under this General Permit: Marin County and its Cities; Napa County and its Cities; City and County of San Francisco; Solano County and the City of Benicia; Sonoma County and the Cities of Petaluma and Sonoma; and certain non-traditional facilities, including universities, prisons, hospitals, military bases, parks and office building complexes.

**Marin Countywide Stormwater Pollution Prevention Program (MCSTOPPP).** The MCSTOPPP is comprised of Marin's 11 cities and towns, the County of Marin, and the Marin County Flood Control and Water Conservation District. The goals of the MCSTOPPP are to prevent stormwater pollution, protect and enhance water quality in creeks and wetlands, preserve beneficial uses of local waterways, and comply with State and Federal regulations. MCSTOPPP supports member agencies by implementing permit compliance tasks and tracking stormwater regulations; documenting local and countywide permit compliance in annual reports submitted to the San Francisco Bay Regional Water Quality Control Board; and providing technical assistance to member agencies and the public through countywide outreach and education programs. In addition, MCSTOPPP developed the Storm Water Resource Plan Functionally Equivalent Document, which identifies and prioritizes potential projects within MCSTOPPP agency jurisdictions that are designed to capture, treat and increase infiltration capacity, and/or use stormwater in ways that provide multiple benefits.

### 12.2.4 County of Marin Regulations

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses protecting residents and structures from natural and man-made hazards (including exposure to hazardous materials and remediation for existing and future development) and emergency planning and preparedness. Applicable adopted Countywide Plan policies include:

#### **Natural Systems and Agriculture Element – Water Resources policies**

- Policy WR-1.1: Protect Watersheds and Aquifer Recharge. Give high priority to the protection of watersheds, aquifer-recharge areas, and natural drainage systems in any consideration of land use.

- Policy WR-1.2: Restore and Enhance Watersheds. Support watershed restoration efforts, coordinate County watershed activities with efforts by other groups, and simplify permit acquisition for watershed restoration and enhancement projects.
- Policy WR-1.3: Improve Infiltration. Enhance water infiltration throughout watersheds to decrease accelerated runoff rates and enhance groundwater recharge. Whenever possible, maintain or increase a site's predevelopment infiltration to reduce downstream erosion and flooding.
- Policy WR-1.4: Protect Upland Vegetation. Limit development and grazing on steep slopes and ridgelines in order to protect downslope areas from erosion and to ensure that runoff is dispersed adequately to allow for effective infiltration.
- Policy WR-2.1: Reduce Toxic Runoff. Reduce the volume of urban runoff from pollutants – such as pesticides from homes, golf courses, cleaning agents, swimming pool chemicals, and road oil – and of excess sediments and nutrients from agricultural operations.
- Policy WR-2.2: Reduce Pathogen, Sediment, and Nutrient Levels. Support programs to maintain pathogen and nutrient levels at or below target levels set by the Regional Water Quality Control Board, including the efforts of ranchers, dairies, agencies, and community groups to address pathogen, sediment, and nutrient management in urban and rural watersheds.
- Policy WR-2.3: Avoid Erosion and Sedimentation. Minimize soil erosion and discharge of sediments into surface runoff, drainage systems, and water bodies. Continue to require grading plans that address avoidance of soil erosion and on-site sediment retention. Require developments to include on-site facilities for the retention of sediments, and, if necessary, require continued monitoring and maintenance of these facilities upon project completion.
- Policy WR-2.4: Design County Facilities to Minimize Pollutant Input. Design, construct, and maintain County buildings, landscaped areas, roads, bridges, drainages, and other facilities to minimize the volume of toxics, nutrients, sediment, and other pollutants in stormwater flows, and continue to improve road maintenance methods to reduce erosion and sedimentation potential.

#### **Natural Systems and Agriculture Element – Environmental Hazards policies**

- Policy EH-2.4: Protect Coastal Areas from Tsunamis. When inundation maps become available, address tsunami wave run-up and inundation when reviewing proposed development along coastal areas of Marin County.
- Policy EH-3.1: Follow a Regulatory Approach. Utilize regulations instead of flood control projects whenever possible to minimize losses in areas where flooding is inevitable.
- Policy EH-3.2: Retain Natural Conditions. Ensure that flow capacity is maintained in stream channels and floodplains, and achieve flood control using biotechnical techniques instead of storm drains, culverts, riprap, and other forms of structural stabilization.

- Policy EH-3.3: Monitor Environmental Change. Consider cumulative impacts to hydrological conditions, including alterations in drainage patterns and the potential for a rise in sea level, when processing development applications in watersheds with flooding or inundation potential.
- Policy EH-3.4: Consider Flood Inundation. Consider flood inundation resulting from upstream dam failures when assessing flood hazards for environmental review and implementing associated programs within the County.

### **Built Environment Element – Public Facilities and Services policies**

- Policy PFS-3.3: Reduce Storm Water Volume. Implement appropriate upstream water-saving technologies to reduce storm water volumes and increase percolation. Increase permeable surfaces and encourage on-site percolation to reduce storm water volume and potential overflow of wastewater treatment facilities.

### **Built Environment Element – Planning Areas policies (these policies pertain specifically to the St. Vincent's and Silveira Planning Area)**

- Policy SV-1.4: Maintain the Miller Creek Corridor. Consistent with streamside conservation policies in the Natural Systems and Agriculture Element, maintain the Miller Creek corridor east of Highway 101 as an open channel and enhance the creek. Require minimum setbacks of 100 feet from the top of each bank. Protect Miller Creek as the centerpiece of the watershed and an important natural habitat area.
- Policy SV-1.8: Restrict Development in Flood and Geologic Hazard Areas. Restrict development in areas identified as having potential flood or geologic hazards, including unstable slopes and bay mud areas, as necessary to ensure public health and safety.
- Policy SV-1.9: Retain the Natural Drainage Swale. Retain the drainage swale and its discharge sources in the northwest section of the St. Vincent's property. Improve the swale as a natural drainage feature and enhance it as a wildlife corridor connecting the uplands with the Miller Creek riparian corridor.
- Policy SV-1.10: Prepare a Plan for Storm Water Drainage and Flood Protection. Prepare an areawide storm water drainage and flood protection plan prior to development in the area.
- Policy SV-3.3: Orient Development Toward Miller Creek. In areas adjoining Miller Creek, development shall be set back from as well as oriented toward the creek in order to encourage preservation of the creek as an environmental resource. Development should not turn its back on the creek.

**Marin County Code.** Marin County Chapter 11.08 prohibits obstruction of creek flow to ensure proper drainage; Chapter 22.14 includes development standards for floodways; Chapter 23.08 establishes requirements for grading permits, including erosion and sediment control plans; Chapter 23.09 establishes requirements, standards, and prohibitions for development within flood hazard areas; and Chapter 23.18 establishes County requirements for minimizing stormwater runoff and reducing pollutant discharges.

**Marin County Multi-Jurisdiction Local Hazard Mitigation Plan (MCM LHMP) (2018).** The Marin County Multi-Jurisdiction Local Hazard Mitigation Plan involves the 11 incorporated towns and cities in the County, the North Marin Water District, and the County's input on the unincorporated territories, with an overall strategy to assess risks posed by natural hazards and to develop a mitigation strategy for reducing risks in the County. The plan focuses on mitigation *before* rather than after disasters by: (1) identifying natural hazards faced by the communities, the water district, and the County (e.g., earthquakes, flooding, wildfire), (2) assessing the communities', the water district's, and County's vulnerability to these hazards, and (3) identifying specific preventive actions that can be taken to reduce the risk from the hazards. The plan, which has been approved by the 11 incorporated towns and cities, the water district, and by the Marin County Board of Supervisors, fulfills the requirements of the Federal Disaster Mitigation Act of 2000.

**Marin Operational Area Emergency Operations Plan (2014).** In 2014, the Marin County Sheriff's Office of Emergency Services prepared the Marin Operational Area (OA) Emergency Operations Plan (EOP) to address the planned response to extraordinary emergency situations associated with large-scale disasters affecting Marin County, including winter storms, flooding, and tsunami among others. The EOP also addresses integration and coordination with other governmental agencies when required. The EOP provides the overall concept, organizational framework, and policies for responding to a major emergency or disaster within the Operational Area. In addition, the EOP establishes policies and procedures, and assigns responsibilities, to ensure the effective management of emergency operations within the Marin OA, including how and when the EOC staff is activated.

### 12.3 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to hydrology and water quality that could result from the Project and discusses Project policies and actions that would avoid or reduce those potential impacts.

Storm drainage *infrastructure* (e.g., physical improvements to collect and convey drainage) are described in Chapter 19 (Utilities and Service Systems) of this EIR.

#### 12.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to hydrology and water quality if it would:

- A. Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or ground water quality;
- B. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- C. Substantially alter the existing drainage pattern of the Planning Area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would:
  - 1. result in substantial erosion or siltation on- or offsite;



2. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
3. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
4. impede or redirect flood flows;

D. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or

E. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Criterion (c)(iii), regarding stormwater infrastructure *capacity*, is discussed in Chapter 19 (Utilities and Service Systems) of this EIR.

### 12.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

This Section contains the proposed revised and new policies and implementing programs from the Safety Element Update that would avoid or reduce significant hydrology and water quality impacts. The Housing Element Update does not contain policies or implementing programs that specifically address these impacts.

New Safety Element Update policy and program language is shown in underline while deleted language is shown with ~~strike through~~.

*[renumbered only]* Policy EH-23.4 Protect Coastal Areas from Tsunamis. Refer to tsunami wave run-up and inundation maps when reviewing proposed development along coastal areas of Marin County.

Policy EHS-~~34~~.1 Follow a Regulatory Approach. Utilize regulations instead of flood ~~control~~ infrastructure projects whenever possible to minimize losses in areas where flooding is inevitable.

Policy EHS-~~34~~.2 Retain Natural Conditions. Ensure that flow capacity is maintained in stream channels and flood plains, and achieve flood ~~control~~ management using flood plain restoration and biotechnical techniques instead of storm drains, culverts, riprap, and other forms of structural stabilization.

*[renumbered only]* Policy EHS-~~34~~.3 Monitor Environmental Change. Consider cumulative impacts to hydrological conditions, including alterations in drainage patterns and the potential for a rise in sea level, when processing development applications in watersheds with flooding or inundation potential.

Policy EHS-~~34~~.4 Consider Flooding from Dam Failure ~~Inundation~~. Consider flood inundation resulting from upstream dam failures when assessing flood hazards for environmental review and implementing associated programs within the County.

Policy EHS-4.5 Encourage Modifications or Relocation of Existing Development. Support and encourage private property owners to either modify, elevate, reinforce, or relocate development in flood-prone areas to account for increased flood extents and depths.

Policy EHS-4.6 Protect Public Facilities. Minimize potential damage to essential public facilities due to flooding.

Policy EHS-6.3 Adapt to Sea Level Rise. Safeguard the Marin shoreline, coastline, natural resources, recreational resources, and urban uses from flooding due to rising sea levels.

Program EHS-~~23~~.4.a Address Tsunami Potential. Review tsunami wave run-up and inundation maps, ~~when available~~, along with other applicable information to be considered in coastal planning and development.

*[renumbered only]* Program EHS-~~34~~.1.a Regulate Development in Flood and Inundation Areas. Continue to require all improvements in Bayfront, Floodplain, Tidelands, and Coastal High Hazard Zones to be designed to be more resistant to damage from flooding, tsunamis, seiches, and related water-borne debris, and to be located so that buildings and features such as docks, decking, floats, and vessels would be more resistant to damage.

Program EHS-~~34~~.1.b Update Maps. ~~Annually~~ Periodically review those areas covered by the Countywide Plan that are subject to flooding, identified by floodplain mapping prepared by the Federal Emergency Management Agency (FEMA) or Department of Water Resources, and update Figure 2-13 and other General Plan maps accordingly. Map the combined effects of the FEMA 100-year storm event with sea level rise projections. Periodically review and overlay County zoning maps to show flood, tsunami, and inundation hazard areas along the San Francisco Bay, San Pablo Bay, Tomales Bay, and the Pacific Ocean, the Bayfront Conservation Zone, and the Coastal Zone.

*[renumbered only]* Program EHS-~~34~~.1.c Revise Regulations. Consider expanding the F-1 and F-2 Floodway Districts to include areas of the unincorporated county that lie within primary and secondary floodways, and/or establishing an ordinance that will ensure that land use activities in flood hazard areas will be allowed only in compliance with federal standards.

Program EHS-~~34~~.1.d ~~Maintain Flood Controls~~ Maintain Flood Management Measures. Continue to implement adopted flood ~~control~~ management programs within designated flood zones, including limitations on land use activities in flood hazard areas and through the funding for repair and maintenance of necessary flood ~~control~~ management structures in partnership with local flood zones.

Program EHS-~~34~~.1.e ~~Restrict Design~~ Development in Flood Prone Areas to Avoid Minimize Inundation. Continue to regulate development in Special Flood Hazard areas by applying the County's Floodplain Management Ordinance, Federal Emergency Management Agency regulations, and environmental review pursuant to the California Environmental Quality Act (CEQA). Rather than explicitly restrict development in tsunami and flood hazard areas, unless a site is repeatedly and significantly affected by flooding, require through amendments to County codes, new development to be designed, elevated, sited, and/or strengthened against flood inundation. Flood adaptation measures should, at a minimum, be consistent with FEMA regulations to reduce flood risk to residential buildings. Where possible, use nature-based flood adaptation measures, such as widening natural flood

plains, creating constructed dunes, protecting and expanding wetlands, and creating new and expanding existing urban green spaces.

Program EHS-34.1.f Continue Compliance under the National Flood Insurance Program (NFIP). Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:

- Enforce the flood damage prevention ordinance.
- Participate in floodplain identification and mapping updates.
- Provide public assistance/information on floodplain requirements and impacts.

Program EHS-34.1.g Facilitate Community Coordination Around Shoreline Adaptation. Develop a framework for incentivizing landowners to work together on shoreline protection projects and facilitating public communication and coordination around shoreline protection in a process that follows Safety Element policies and programs.

Program EHS-34.2.a Retain Ponding Areas. Maintain publicly controlled flood ponding areas in a natural state for flood control management, and continue to promote compatible uses in ponding areas, such as agriculture, open space, and recreation.

Program EHS-34.3.a Require Hydrologic, Hydraulic, and Geomorphic Studies. Continue to require submission of detailed hydrologic and geologic geomorphic studies for any proposed development that could increase sedimentation of a watercourse or alter natural drainage patterns. Amend the Development Code to include findings to continue to regulate development in flood prone areas to ensure public health and safety and to preserve the hydraulic and geomorphic integrity of the stream system and associated habitat.

*[renumbered only]* Program EHS-34.3.b Assess the Cumulative Impacts of Development in Watersheds on Flood Prone Areas. Consider the effects of upstream development, including impervious surfaces, alteration of drainage patterns, reduction of vegetation, increased sedimentation, and others, on the potential for flooding in low-lying areas. Consider watershed studies to gather detailed information.

Program EHS-34.4.a Maintain Update Current Dam Inundation Failure Maps. Update and make Maintain up-to-date public inundation maps for dam/reservoir complexes where downstream valleys are inhabited and the risk of loss of life and extensive property damage is significant. Coordinate with water districts to obtain the most current information from their dam safety programs and reports submitted to the State Division of Safety of Dams.

Program EHS-4.5.a Provide Flood Reduction Information Resources. Provide private property owners with resources and recommendations for reinforcing development against flooding. Advocate for a hierarchy of flood adaptation measures beginning with the most preferred strategies, as follows: 1. nature-based solutions; 2. measures to accommodate flooding, such as reinforced or raised ground level floors; 3. a mix of soft (i.e., nature-based) and hard engineering strategies, 4. strictly hard engineering strategies (i.e., structural stabilization).

*[renumbered only]* Program EHS-34.5.c Alert Property Owners. Notify owners of property in areas with inundation or flooding potential regarding those hazards when they seek development review or other related County services.

~~Program EHS-34.6.a Locate Critical Facilities Safely. Amend the Development Code to prohibit placement of public safety structures within tsunami inundation or flood-prone areas. Protect and Ensure Continued Operation of Critical Public Facilities. Locate new essential critical facilities, including hospitals and healthcare facilities, emergency shelters, fire stations, emergency command centers, emergency communications facilities, and utility infrastructure outside tsunami and flood hazard areas. If a critical public facility must be located in a tsunami and flood hazard area, ensure the facility is designed to withstand and remain operational under anticipated future flooding conditions. Where existing critical public facilities are at risk due to flooding, require on- and off-site flood risk adaptation measures to reduce potential losses. Flood risk adaptation measures may include but are not limited to raising electrical and gas systems, installing watertight doors, installing flood shields for windows and entrances, constructing flood barriers or floodwalls, and raising the ground floor of the facility. Consider alternate, less hazard prone locations for lost structures and facilities.~~

Program EHS-6.1.f Disclose Current and Future Hazards. Develop a resale inspection permit program that provides disclosure of hazard risk information to prospective buyers prior to the sale of property. The program should include detailed hazard information, such as very high and high hazard wildfire severity zones, flood zones, tsunami and future sea level rise inundation areas, and Alquist-Priolo zones.

Program EHS-6.1.h Use Environmentally Sensitive Adaptation Strategies. Where feasible the County should encourage the use of existing natural features and ecosystem processes, or the restoration thereof, in adaptation projects and measures. This includes systems and practices that use or mimic natural processes, such as permeable pavements, bioswales, and other engineered systems, such as levees that are combined with restored natural systems, to provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife. Proposals addressing adaptation must analyze the feasibility of natural features and ecosystem process before proposing alternative measures.

Program EHS-6.3.c Explore Future Bayland Corridor Amendment. Explore expanding and aligning the Baylands Corridor and BFC area to align both the geographic extent and the policy direction. The geographic extent should include areas subject to future flooding and related policies and programs should include standards to protect from or adapt to rising sea level.

~~Program EHS-6.3.g Plan for Climate Change Impacts, Including Sea Level Rise. Consider Sea Level Rise in Flood Control Planning and Projects. Consider sea level rise in future countywide and community plan flood control efforts. Apply for membership in the National Flood Insurance Program's (NFIP) Community Rating System (CRS), and as appropriate through revisions to the Marin County Code, obtain reductions in flood insurance rates offered by the NFIP to community residents. official midcentury and end-of-century sea level rise estimates in Participate in the Bay Area Climate & Energy Resilience Project and its March 2013 Proposed 12-Month Action Plan, developed by the Bay Area Joint Policy Committee of the Association of Bay Area Governments. Cooperate with FEMA in its efforts to comply with recent congressional mandates to incorporate predictions of sea level rise in~~

its Flood Insurance Studies and FIRM. Periodically revise the Marin County Hydrology Manual to, at a minimum, incorporate use of the most recent updated rainfall frequency data from NOAA's Atlas 14 Volume 6, Vers. 2.1 California (rev. 2012).

Program EHS-6.3.k Study Impacts of Rising Groundwater Levels from Sea Level Rise. Conduct studies on the effects of rising groundwater on the community and the built environment including the potential transport of toxic or hazardous chemicals in the soil at contamination sites and the effects on septic systems. In areas where rising groundwater levels could adversely impact the functioning of existing or future septic systems, the County will undertake a study to identify the hazards and identify solutions.

### 12.3.3 Impacts and Mitigation Measures

The following analysis is provided at a programmatic level consistent with the level of detail of the proposed Project.

**Impact 12-1: Water Quality Impacts.** *[Threshold of Significance (a)]* The RWQCB, MCSTOPPP, and Marin County water quality protection requirements and conditions applicable to implementation of the Project are intended to reduce any potential construction period and post-construction water quality impacts to a *less-than-significant level*, consistent with federal and State water quality regulations and plans (see Section 12.2, Regulatory Setting). These RWQCB, MCSTOPPP, and Marin County requirements and conditions apply to future potential development facilitated by both the Housing Element Update and the Safety Element Update.

Potential housing facilitated by the Housing Element Update would include development on vacant sites and also replacing existing developed areas with new development. While residential and commercial densities and building heights could change, there would be minimal difference in terms of stormwater runoff because surface runoff is determined by a parcel's impervious surface area and not use or density. However, no substantial increase in stormwater runoff is anticipated for development facilitated by the Housing Element Update due primarily to the existing stormwater management requirements identified above and further discussed below. Furthermore, reductions in stormwater flows could result from increased landscaped areas and other water quality enhancements that do not currently exist.

Potential activities facilitated by the Safety Element Update would include possible construction of road improvements, creation of new evacuation routes or improvement of deficient routes, and other access provisions; in addition, possible retrofitting of County Buildings and critical facilities could be facilitated by the Safety Element Update. Although some increase in stormwater runoff could occur, the increase would not be anticipated to be substantial due to the existing stormwater management requirements identified above and further discussed below.

*Construction Period Water Quality – Applies to both Housing Element Update and Safety Element Update.* Any project requiring a grading permit would be required to submit an Erosion and Sediment Control Plan (ESCP), which would be subject to review and approval by the County, and would need to meet County standards such as including erosion control best management practices (BMPs) for grading activities and revegetation of graded areas; proper sizing of detention basins, dams, or filters intended to reduce release of suspended sediment; and designating washout areas or facilities for equipment. Individual projects disturbing more than one acre of ground would be required to obtain coverage under the State Construction General Permit, which requires preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP); the SWPPP also must include BMPs to control contamination of

surface flows and potential discharge of pollutants from commencement of construction through project completion. These standard NPDES and County required construction period measures would reduce the construction period pollutants entering waterbodies to a *less-than-significant level*.

*Post-Construction Water Quality* – Applies to both Housing Element Update and Safety Element Update. As discussed in Section 12.1.2, Water Quality, proposed development or redevelopment would be required to comply with Marin County post-construction stormwater requirements, which would vary depending on the size of the project. Stormwater improvements would be designed to control flow rates and/or volume of stormwater runoff from added and/or replaced impervious surfaces, with the intent of no net increase in stormwater release off-site compared to pre-project site hydrology. One of the preferred control measures is to retain drainageways above ground and in as natural a state as possible or other biological methods such as bioretention areas.

Projects between 2,500 square feet and 5,000 square feet of impervious surface would need to incorporate a site design measure such as stream setbacks and buffers; soil quality improvement and maintenance; tree planting and preservation; rooftop and impervious area disconnection; porous pavement; green roofs; vegetated swales; and rain barrels and cisterns; these improvements would be required to decrease runoff from the site. Projects of 5,000 square feet or more of impervious surface would need to incorporate site design measures and also include other measures such as minimizing new roof and paving area; using pervious surfaces instead of paving where feasible, which would allow runoff to infiltrate the underlying soil; and capturing remaining runoff from impervious areas or otherwise treating via bioretention.

In addition, where required by the NPDES “E.12” stormwater permit provisions or otherwise deemed appropriate by the Marin County Public Works Department, a stormwater control plan (SCP) following BASMAA Post Construction Manual templates would be required. The SCP requirement is in addition to the erosion and sediment control plan requirements discussed above and further described in County Code Section 24.04.625.

These NPDES and County required post-construction period measures would reduce the post-construction period pollutants entering waterbodies to a *less-than-significant level*. In addition, Safety Element Update Program EHS-6.1.h Use Environmentally Sensitive Adaptation Strategies would support these stormwater management measures.

Therefore, proposed new Program EHS-6.1.h and Project compliance with these standard NPDES and County stormwater management requirements would ensure that any potential impacts on water quality standards, waste discharge requirements, and surface or groundwater quality from future development facilitated by the Project would be ***less-than-significant***.

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**Impact 12-2 Groundwater Recharge and Groundwater Management Impacts.** *[Threshold of Significance (b)]* Development facilitated by the Housing Element Update and the Safety Element Update could affect groundwater recharge and groundwater management.

Potential housing facilitated by the Housing Element Update would include sites that are currently vacant and sites that currently contain structures, surface parking, and landscaping. For vacant sites, development would not include the entire site area. Developable areas on other sites would be restricted due to natural or environmental conditions, such as steep terrain

or proximity to creeks. Future development of vacant lots would introduce new impermeable surfaces such as roofs and parking areas, which could result in an increase in surface water runoff. However, as discussed above in Impact 12-1, future development would be required to comply with the (1) NPDES MS4 Permit; (2) State Water Board Construction General Permit, as applicable; (3) Marin Countywide Stormwater Pollution Prevention Program protocols; and (4) Marin County Code standards and regulations.

Potential activities facilitated by the Safety Element Update would include possible construction of road improvements, creation of new evacuation routes or improvement of deficient evacuation routes, other access provisions, and possible retrofitting of County Buildings and critical facilities. Although this construction could introduce new impermeable surfaces, which could result in an increase in surface water runoff, the potential construction activities would be required to comply with the (1) NPDES MS4 Permit; (2) State Water Board Construction General Permit, as applicable; (3) Marin Countywide Stormwater Pollution Prevention Program protocols; and (4) Marin County Code standards and regulations.

Implementation of the requirements of these regulations and permits would reduce the amount and/or rate of surface runoff; therefore, future development facilitated by the Housing Element Update and/or the Safety Element Update would not substantially interfere with groundwater recharge.

Further, as discussed in Section 12.1.3, Groundwater Conditions, none of the four groundwater basins in the county is under management by a groundwater sustainability agency. In addition, although the Point Reyes community, Stinson Beach County Water District, and Muir Beach Community Services District use groundwater for part of their water supply, the four groundwater basins in the county are not located within the service areas for these communities. Implementation of State and County stormwater management policies would likely result in an increase in the use of bioretention and other methods that would slow rates of water flow, which would allow stormwater to infiltrate the soil and support groundwater recharge. In addition, as discussed in Impact 12-1, new development and redevelopment, depending on the area of impervious surfaces, could be required to incorporate on-site methods to result in no net increase in drainage off-site compared to pre-project site hydrology; these methods could include low impact development techniques that filter, store, evaporate, and detain runoff close to the source of rainfall and control the rate and/or volume of stormwater, allowing stormwater to naturally infiltrate soils.

Safety Element Update Program EHS-6.1.h Use Environmentally Sensitive Adaptation Strategies would support groundwater recharge. Therefore, proposed new Program EHS-6.1.h and Project compliance with County stormwater management measures would ensure that impacts on groundwater recharge and groundwater management from future development facilitated by the Project would be ***less-than-significant***.

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**Impact 12-3: Stormwater Runoff and Drainage Impacts.** *[Threshold of Significance (c)]* As discussed in Impact 12-1, RWQCB, MCSTOPPP, and Marin County stormwater management requirements and conditions apply to future potential development facilitated by both the Housing Element Update and the Safety Element Update. Potential future development facilitated by the Housing Element Update and potential activities facilitated by the Safety Element Update would occur in existing developed areas and on some sites that are currently vacant; however, this potential future development would be required to comply with State and

County stormwater management standards. Standard construction period requirements applicable to potential future development facilitated by the Housing Element Update and the Safety Element Update include preparation of an Erosion and Sediment Control Plan to reduce on-site erosion and off-site siltation, and if disturbing more than one acre of ground, State General Construction Permit requirements including preparation of a Stormwater Pollution Prevention Plan. Standard post-construction period requirements include (1) site design measures to minimize impervious surfaces, or reduce runoff by dispersing it to landscaping or using pervious pavements; and (2) use of low-impact development techniques to result in no net increase in drainage off-site compared to pre-project site hydrology. All these stormwater management measures and techniques are designed to reduce the volume and rate of stormwater and allow water to infiltrate the underlying soil naturally, or capture water for reuse such as a rain barrel or cistern for irrigation purposes. These measures would reduce the effects of new or replaced impervious surfaces due to potential future development facilitated by the Project. As discussed further in Impact 12-4, future development in a flood hazard area would be required to comply with the County's floodplain management standards in County Code Chapter 23.09, which are designed to prevent or regulate construction of barriers that might unnaturally divert floodwaters or increase flood hazards in other areas.

Safety Element Update Program EHS-6.1.h Use Environmentally Sensitive Adaptation Strategies would support these stormwater management measures which would support reducing the effects of stormwater on existing drainage patterns. Therefore, proposed new Program EHS-6.1.h and Project compliance with County stormwater management measures would ensure that impacts on drainage and related effects on erosion or siltation, on- or off-site flooding, redirecting of flood flows, creating substantial additional sources of polluted runoff, or exceeding stormwater drainage system capacity from future development facilitated by the Project would be ***less-than-significant***.

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**Impact 12-4: Risks from Pollutant Release due to Project Inundation.** [*Threshold of Significance (d)*] The Federal Emergency Management Agency (FEMA) is responsible for publishing Flood Insurance Rate Maps (FIRMs) that determine level of flood risk for communities. FEMA's flood risk maps are pertinent to future development facilitated by both the Housing Element Update and the Safety Element Update because the maps identify "Special Flood Hazard Areas" (SFHAs) that are subject to inundation by a 1% annual chance flood (e.g., a 100-year flood event) and therefore indicate areas where future development could be at risk of damage from a 100-year flood event. As shown earlier on Figure 12-2, flood hazards mapped by FEMA include zones located in many parts of the county and are associated with the many creeks in the county. In addition, as also discussed in Section 12.1.4, "Flooding and Flood Hazards," there are areas of the county susceptible to other forms of flooding, such as coastal areas susceptible to tsunami and areas downstream of reservoirs and lakes that could be susceptible to flooding due to seiche.

The vast majority of the candidate housing sites are not located in flood hazard areas, but as discussed in subsection 12.1.4 and shown on Figure 12-3, there are several sites or portions of sites that are in flood hazard areas. Although the LHMP identified 14 areas as being in tsunami inundation areas, the vast majority of those areas do not include any housing sites proposed under the Housing Element Update. Proposed housing sites or portions of sites identified in the LHMP are restricted to Almonte, Stinson Beach, and Strawberry. Without a map depicting flooding from seiche, flood risk from a seiche can reasonably be considered to occur on large waterbodies, such as a reservoir behind a dam. Although most of the housing sites proposed



under the Housing Element Update are not located in dam inundation areas and therefore would not be at risk during a seiche, some housing sites or parts of sites are proposed in the inundation areas of the following dams: Phoenix Dam, Peters Dam (Kent Lake), Nicasio Dam, and the dam at Stafford Lake, where the water released during a seiche would be likely to travel along the same route as water from a dam failure.

Future potential development facilitated by the Housing Element Update and the Safety Element Update located in FEMA-designated flood areas would be required to comply with standard FEMA provisions and County Code floodplain management standards in County Code Chapter 23.09. As stated in Chapter 23.09, the County applies uniformly applicable regulations for increasing structural elevations and/or incorporating floodproofing measures like anchoring structures and use of specific construction materials. These standards would decrease the risk of pollutant release during a flooding, tsunami, or seiche event.

The Safety Element proposes many implementing programs designed to reduce risk due to flooding. These proposed programs are listed below. Their full text is included in subsection 12.3.2 (Proposed Policies and Actions to Avoid or Reduce Significant Impacts).

- Program EHS-~~23~~.4.a Address Tsunami Potential
- Program EHS-~~34~~.1.a Regulate Development in Flood and Inundation Areas
- Program EHS-~~34~~.1.b Update Maps
- Program EHS-~~34~~.1.c Revise Regulations
- Program EHS-~~34~~.1.d ~~Maintain Flood Controls~~ Maintain Flood Management Measures
- Program EHS-~~34~~.1.e Restrict ~~Design~~ Development in Flood Prone Areas to ~~Avoid~~ Minimize Inundation
- Program EHS-~~34~~.1.f Continue Compliance under the National Flood Insurance Program (NFIP)
- Program EHS-~~34~~.1.g Facilitate Community Coordination Around Shoreline Adaptation
- Program EHS-~~34~~.2.a Retain Ponding Areas
- Program EHS-~~34~~.3.a Require Hydrologic, Hydraulic, and Geomorphic Studies
- Program EHS-~~34~~.3.b Assess the Cumulative Impacts of Development in Watersheds on Flood Prone Areas
- Program EHS-~~34~~.4.a Maintain Update Current Dam Inundation Failure Maps
- Program EHS-4.5.a Provide Flood Reduction Information Resources
- Program EHS-~~34~~.5.c Alert Property Owners
- Program EHS-~~34~~.6.a ~~Locate Critical Facilities Safely. Amend the Development Code to prohibit placement of public safety structures within tsunami inundation or flood-prone areas.~~ Protect and Ensure Continued Operation of Critical Public Facilities

- Program EHS-6.1.f Disclose Current and Future Hazards
- Program EHS-6.1.h Use Environmentally Sensitive Adaptation Strategies
- Program EHS-6.3.c Explore Future Bayland Corridor Amendment
- Program EHS-6.3.g Plan for Climate Change Impacts, Including Sea Level Rise. Consider Sea Level Rise in Flood Control Planning and Projects
- Program EHS-6.3.k Study Impacts of Rising Groundwater Levels from Sea Level Rise

These proposed implementing programs and Project compliance with County flood hazard protection and flood control measures would ensure that impacts from pollutant release during a flood, tsunami, or seiche event from future development facilitated by the Project would be **less-than-significant**.

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**Impact 12-5: Conflicts with Water Quality Control or Sustainable Groundwater Management Plans.** [Threshold of Significance (e)] As discussed under Impact 12-1, established programs for controlling stormwater runoff and reducing pollutants in stormwater, as stated in Marin County Code stormwater regulations and the MCSTOPPP, would apply to future development facilitated by the Project such as potential housing development under the Housing Element Update and/or construction and other activities under the Safety Element Update. These programs and regulations are designed for consistency with the NPDES MS4 permit, which itself complies with Federal clean water laws and is consistent with State clean water laws. Because future development facilitated by the Project would incorporate these NPDES MS4 and Marin County Code stormwater measures, the Project would be consistent with the San Francisco Bay Water Quality Control Plan (Basin Plan) and would not result in a conflict with the Basin Plan.<sup>25</sup> As described in Section 12.1.3, Groundwater Conditions, none of the four groundwater basins in the county has been designated a medium- or high-priority basin by the California Department of Water Resources; therefore, none of these groundwater basins requires a groundwater management plan, and the Project would not result in a conflict with a sustainable groundwater management plan.<sup>26</sup>

Safety Element Update Program EHS-6.1.h Use Environmentally Sensitive Adaptation Strategies would support these stormwater management measures and would support reducing the effects of stormwater on existing drainage patterns. Because future development facilitated by the Project would incorporate NPDES MS4 and Marin County Code stormwater measures, the Project would be consistent with the San Francisco Bay Water Quality Control Plan (Basin

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<sup>25</sup>As explained by the Water Board, “The Basin Plan fulfills the requirements of the Porter-Cologne Act that call for water quality control plans in California...establishes or indicates water quality standards applicable to waters of the Region, as required by the federal Clean Water Act...[and] establishes water quality attainment strategies, including total maximum daily loads (TMDLs) required by the Clean Water Act, for pollutants and water bodies where water quality standards are not currently met.” ([https://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/planningtmdls/basinplan/web/p\\_ch1.html](https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/basinplan/web/p_ch1.html), accessed 7/25/22)

<sup>26</sup>California Department of Water Resources, Basin Prioritization, <https://water.ca.gov/programs/groundwater-management/basin-prioritization>, accessed 7/27/22.

Plan). Because there are no groundwater management plans for the County, these water quality and groundwater management plan impacts would be ***less-than-significant***.

### **Cumulative Hydrology and Water Quality Impacts**

Future cumulative development outside of the Project planning area could result in soil erosion, alteration of local drainage and runoff characteristics, and long-term water quality effects, but would be subject to the same State and MCSTOPPP regulations and standards, as discussed above in Section 12.2, Regulatory Setting, and described in Impact 12-1, Impact 12-2, Impact 12-3, Impact 12-4, and Impact 12-5. For areas within the unincorporated county, Marin County stormwater management regulations and standards would also apply. Incorporated cities and towns would apply their own standards, which would be required to comply with State and MCSTOPPP regulations and standards that would ensure that any cumulative impacts would be less-than-significant. Therefore, future potential development facilitated by the Project would not make a cumulatively considerable contribution to any significant cumulative impact with respect to hydrology and water quality, and this impact would be ***less-than-significant***.

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## 13. LAND USE AND PLANNING

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
Land Use and Planning. <i>Would the project:</i>				
a) <i>Physically divide an established community?</i>			X	
b) <i>Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?</i>			X	

This EIR chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts.

### 13.1 ENVIRONMENTAL SETTING

The environmental setting discussion provides an overview of the County's land use patterns, focusing on communities where new housing sites are proposed by the Housing Element Update.

#### 13.1.1 Planning Boundaries

Marin County is one of the nine counties that constitute the San Francisco Bay Area. The Project encompasses the unincorporated area of Marin County, located in the northwestern part of the San Francisco Bay Area, also known as the North Bay. Marin County's total land and water area is approximately 606 square miles, of which about 87 percent (527 square miles) is unincorporated. The county is linked to San Francisco by the Golden Gate Bridge and to the East Bay by the Richmond-San Rafael Bridge. Sonoma County is to the north and east, with San Francisco Bay to the southeast and the Pacific Ocean on the county's western border. The county has a population of approximately 261,776, with 192,701 in the incorporated cities and towns, and 69,075 in the unincorporated county.<sup>2</sup>

<sup>1</sup>State CEQA Guidelines, Appendix G, item XI (a and b).

<sup>2</sup>County of Marin Community Development Agency, *Marin Countywide Update Draft EIR*, January 2007, p. 3.0-2; U.S. Census Bureau, Population Division, Annual Estimates of the Resident Population for Counties in California: April 1, 2020 to July 1, 2021, release date March 2022, <https://www.census.gov/data/datasets/time-series/demo/popest/2020s-counties-total.html> and Annual Estimates of the Resident Population for Incorporated Places in California: April 1, 2020 to July 1, 2021 (SUB-IP-EST2021-POP-06), release date May 2022, <https://www.census.gov/data/datasets/time-series/demo/popest/2020s-total-cities-and-towns.html>, both accessed 6/19/22.

Please see the EIR Project Description (Chapter 3) for details on the proposed Project and its location in the Bay Area. U.S. 101 is the major highway running north-south through the County; State Route (SR) 1 runs north-south along the western part of the County, accessing Sonoma County to the north. U.S 101 and SR 1 merge just north of Marin City before continuing to San Francisco via the Golden Gate Bridge. Interstate 580 (I-580) accesses Contra Costa County to the east via the Richmond-San Rafael Bridge. In addition, farther northeast, SR 37 accesses Sonoma County.

Most of Marin County's population resides in the eastern portion of the county in an area of urban development along the U.S. 101 corridor. The western part of the county, generally in and around Point Reyes Station, has a local tourism focus centered around agriculture and abundant parklands and recreation areas. The northwestern part of the county is sparsely populated, and agricultural rangeland is the dominant land use. Land ownership in the county includes federal, state, local (County), and private property owners. Approximately 85 percent of the land area in Marin County is protected from development through open space purchases and conservation easements; federal, State, County, and local parkland; watershed lands; and agricultural zoning.<sup>3</sup>

### 13.1.2 2007 Countywide Plan (CWP) Land Use Designations and Zoning

The adopted 2007 CWP identifies the land use designations described below.<sup>4</sup> The Housing Element Update does not propose any changes to the definitions of these designations.

- **Agriculture**
  - **Agriculture and Conservation Land Use Categories:** Agriculture and Conservation land use categories (AGC 1-3) are established for land with resource values for both agricultural production and wetlands and wildlife habitat. These lands may also have physical constraints, such as heavily wooded hillsides that limit their potential for agricultural production and deserve protection on the basis of their habitat and visual resource values. Historically, 60 acres has been the minimum parcel size for most agricultural and resource conservation lands in the county.
  - **Agricultural Land Use Categories:** Agricultural land use categories (AG 1-3) are established to preserve and protect a variety of agricultural uses, and to enable the potential for agricultural production and diversification. Historically, 60 acres has been the minimum parcel size for most agricultural lands in the county.
- **Residential:** Residential development categories are established at a full range of densities, with an emphasis on providing more affordable housing.
  - **Very Low Density Residential:** Very low-density residential land use categories (Single-Family 1-2 with minimum lot sizes of 5 to 60 acres) are designated for single-family residential development on large properties in rural areas where public services are very limited or nonexistent, and on properties where physical hazards and/or natural resources significantly restrict development.
  - **Rural/Residential:** Rural/residential density land use categories (Single-Family 3-4 and Planned Residential with minimum lot sizes of 20,000 square feet to 10 acres)

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<sup>3</sup>Marin County Community Wildfire Protection Plan, December 2020, pp. 11 and 22.

<sup>4</sup>Marin County Countywide Plan, "Introduction, Land Use Categories," November 6, 2007. [http://calaverascap.com/wp-content/uploads/2011/06/Marin-CWP\\_CD2.pdf](http://calaverascap.com/wp-content/uploads/2011/06/Marin-CWP_CD2.pdf). Accessed May 5, 2022.

- are established for single-family residential development in areas where public services are limited and on properties where physical hazards and/or natural resources may restrict development.
- **Low Density Residential:** Low density residential land use categories (Single-Family 5-6 and Multi-Family 2 with minimum lot sizes of 10,000–20,000 square feet or less) are established for single-family and multi-family residential development in areas where some public urban services are available and where properties are not typically constrained.
  - **Low to Medium Density:** Residential Low to medium density residential land use categories (Multi-Family 3 and 3.5 allowing 5 to 16 units per acre) are established where moderate density and multi-family residential development can be accommodated in areas that are accessible to a range of urban services near major streets, public transit, and neighborhood shopping facilities.
  - **Medium to High Density:** Residential Medium to high density residential land use categories (Multi-Family 4 and 4.5 allowing 11 to 45 units per acre) are established within the City-Centered Corridor in communities where multi-family development can be accommodated with easy access to a full range of urban services at locations near major arterials, public transit, and community and regional shopping facilities.
  - **Commercial and Mixed Use:** The following land use categories are established for general, office, neighborhood, recreational, commercial, and industrial uses. Mixed-use developments that incorporate residential units on commercial properties are encouraged to provide on-site housing for employees and other residents, and to contribute to fair share housing needs. Accordingly, residential uses may be permitted in all of the following commercial land use categories:
    - **General Commercial/Mixed Use:** The General Commercial land use category is established to allow for a wide variety of commercial uses, including retail and service businesses, professional offices, and restaurants, as well as moderate to high density mixed-use residential development.
    - **Office Commercial/Mixed Use:** The Office Commercial land use category is established to encourage a mixture of professional, administrative, and medical office uses, as well as medium to high density mixed-use residential development, where appropriate. Employee- and resident-serving retail and service businesses may also be permitted within this category.
    - **Neighborhood Commercial/Mixed Use:** The Neighborhood Commercial land use category is established to encourage smaller-scale retail and neighborhood-serving office and service uses, and mixed-use development oriented toward pedestrians and located in close proximity to residential neighborhoods.
    - **Recreational Commercial:** The Recreational Commercial land use category is established for resorts, lodging facilities, restaurants, and privately owned recreational facilities, such as golf courses and recreational boat marinas.
  - **Industrial:** The Industrial land use category is established for industrial uses such as warehouses, storage, laboratories, retail sales, mine processing, light manufacturing, and administrative offices.
  - **Planned Designation:** The Planned Designation land use category is established and includes the following subcategories: Planned Designation — Agricultural and Environmental Resource Area (PD–Agricultural and Environmental Resource Area), and

Planned Designation — Reclamation Area (PD–Reclamation Area). This land use category enables the planning of reuse projects at major opportunity sites. In order to provide a forum for comprehensive community-based planning, projects in this land use category are subject to approval of a specific or master plan and consistency with the Countywide Plan, including policies promoting affordable housing, and innovative, environmentally friendly, transit-oriented and energy efficient designs.

- **Public, Quasi-Public, and Open Space:** The Public, Quasi-Public, and Open Space land use categories are established for both public and quasi-public institutional purposes, including open space, schools, hospitals, cemeteries, government facilities, correctional facilities, power distribution facilities, sanitary landfills, and water facilities. The Public category is established for land owned by a governmental agency and used as a public institution. The Quasi-Public category is established for land owned by a non-governmental agency that is used as an institution serving the public. Lands in public ownership for open space purposes, such as recreation, and watershed and habitat protection and management, are designated open space. In addition, private lands may be designated open space when subject to deed restrictions or other agreements limiting them to open space and compatible uses. Lands designated as public or quasi-public facilities may be combined with another land use.

In addition to the CWP land use designations, the corresponding zoning districts in the unincorporated county are listed below, as included in Title 22 of the Marin County Development Code, 22.06.020 Zoning Districts Established. The Housing Element Update does not propose any changes to the definitions of these zones.

#### **R1 (Residential, Single-Family, 7,500 ft<sup>2</sup> minimum lot area)**

- AP (Administrative and Professional, 7,500 ft<sup>2</sup> minimum lot area)
- R2 (Residential, Two-Family, 7,500 ft<sup>2</sup> minimum lot area)
- C-R1 (Coastal, One-Family Residence, 7,500 ft<sup>2</sup> minimum lot area)
- RA (Residential, Agricultural, 7,500 ft<sup>2</sup> minimum lot area)
- C-R2 (Coastal, Two-Family Residence, 7,500 ft<sup>2</sup> minimum lot area)
- RR (Residential, Restricted, 7,500 ft<sup>2</sup> minimum lot area)
- C-RA (Coastal, Residential, Agricultural, 7,500 ft<sup>2</sup> minimum lot area)
- RE (Residential, Estate, 7,500 ft<sup>2</sup> minimum lot area)
- C-VCR (Coastal Village Commercial Residential, 7,500 ft<sup>2</sup> minimum lot area)
- A2 (Agriculture, Limited, 2 acres minimum lot area)
- C-H-1 (Coastal, Limited Roadside Business, 7,500 ft<sup>2</sup> minimum lot area)
- A (Agriculture and Conservation, 3-60 acres minimum lot area)
- C-R1-BD (Coastal, Single-Family Residential, Dillon Beach, 1,750 ft<sup>2</sup> minimum lot area)
- C1 (Retail Business, 7,500 ft<sup>2</sup> minimum lot area)
- C-RCR (Coastal, Resort and Commercial Recreation)
- H1 (Retail Business, 7,500 ft<sup>2</sup> minimum lot area)



**The Zoning Code also includes the following special purpose and combining districts:**

- OA (Open Area)
- C-OA (Coastal, Open Area)
- PF (Public Facilities)
- B (Minimum Lot Size)
- BFC (Bayfront Conservation)
- AH (Affordable Housing)

**13.1.3 Candidate Housing Sites**

As discussed in Chapter 3, Project Description, the Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Section 3.4.2(c) in Chapter 3, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of “candidate housing sites,” which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts.

County planning staff reviewed the candidate housing sites taking into consideration the County’s commitment to ensure distribution of the sites throughout the County, address racial equity and historic patterns of segregation, encourage infill and redevelopment opportunities, and consider environmental hazards. In addition, the County considered constraints including nongovernmental constraints, such as limited available vacant land, construction costs and financing, environmental constraints (e.g., existing site conditions and potential hazards), community resistance to new housing, and availability of transit, job centers, public or community services, and infrastructure; and governmental constraints, such as regulatory standards that may present conflicts in land use objectives and create constraints to the production of housing, permit processing, and planning application review and fees.

This larger number of sites – the candidate housing sites – is being evaluated in this EIR to help expedite the review and approval of the Housing Element, in case some sites are replaced by others during the final decision-making process by the Board of Supervisors.

These sites are generally located along the west side of the county from Tomales down to Stinson Beach; along the east side from the Novato area down to Marin City; around Nicasio; in the Lucas Valley-Marinwood area; and in the Lagunitas-Forest Knolls/ San Geronimo/ Woodacre area.

More detail on the site selection process is included in Chapter 3, Project Description, of this EIR.

**13.2 REGULATORY SETTING****13.2.1 State Laws and Regulations**

**General Plan Law (California Government Code Section 65302).** A general plan must include a statement of development policies and a diagram or diagrams and text setting forth

objectives, principles, standards, and plan proposals. A land use element that designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and greenways, as defined in Section 816.52 of the Civil Code.

### 13.2.2 Regional Regulations

**Association of Bay Area Governments (ABAG) Plans and Policies.** The Association of Bay Area Governments (ABAG) is the regional planning agency and council of governments for the nine-county San Francisco Bay Area, responsible for addressing in a regional context such issues as land use, housing, environmental quality, and economic development.

**Plan Bay Area 2050.** The primary document and associated process used in implementing ABAG policies is Plan Bay Area 2050, adopted collectively by ABAG and the Metropolitan Transportation Commission (MTC) on October 21, 2021. Plan Bay Area 2050 is the Bay Area's regional long-range plan adopted by MTC and ABAG. The plan was developed in collaboration with Bay Area residents, partner agencies, and nonprofit organizations. It lays out a \$1.4 trillion vision for a more equitable and resilient future for Bay Area residents. Thirty-five strategies make up the heart of the plan to improve housing, the economy, transportation, and the environment across the Bay Area's nine counties.

### 13.2.3 Local Regulations

**2007 Marin Countywide Plan (CWP).** Under California law (Government Code Section 65300 et seq.), every city and county is required to adopt a general plan that functions as the overarching, comprehensive, and long-range policy document. The general plan must contain at least the seven mandatory elements – land use, circulation, housing, conservation, open space, noise, and safety. In addition, cities and counties with identified disadvantaged communities must also address environmental justice in their general plans, including air quality. In 2007, Marin County adopted the CWP, which was prepared as a comprehensive update of the 1994 Marin Countywide Plan, itself an update of the first Countywide Plan adopted in 1973. The CWP is the comprehensive long-range planning document that guides land use and development in unincorporated Marin County.

Adopted CWP land use policies relevant to the proposed Project include the following:

#### **Built Environment Element – Community Development policies**

- **CD-8.1: Establish Land Use Plan Map Designations.** Land use designations are established as shown on the Land Use Policy Maps based on such factors as:
  - natural resource protection;
  - existing and surrounding land uses;
  - the area's jobs/housing ratio;
  - economic and fiscal goals;
  - traffic capacity and transit needs; and
  - environmental hazards

- **CD-8.2: Establish Land Use Categories.** Established land use categories are generalized groupings of land uses that define a predominant land use type. Some listed uses will be conditional uses under zoning, will require a use permit or other discretionary approval, and may be allowed only in limited areas or under limited circumstances.
- **CD-8.3: Establish Land Use Intensity Standards.** Standards of building intensity expressed as floor area ratios or residential densities (dwelling units per acre) are established for each land use designation. To convert residential units to population densities, 2.3 persons per household shall be assumed. To convert commercial intensities to numbers of jobs, the following nationwide conversion standards shall be applied (in employees per 1,000 square feet of gross floor area): Retail — 4 employees; Wholesale — 3 employees; Service — 3 employees; Manufacturing — 1.1 employees; Other — 3.65 employees.
- **CD-8.4: Establish Agriculture and Conservation Land Use Categories.** Agriculture and Conservation land use categories are established for land with resource values both for agricultural production and for wetlands and wildlife habitat. These lands may also have physical constraints, such as heavily wooded hillsides and ridgelines, that limit their potential for agricultural production and deserve protection on the basis of their habitat and visual resource values. Historically, 60 acres has been the minimum parcel size for most agricultural and resource conservation lands in the county. Various policies regarding agricultural productivity, water availability, effects on water quality, and other factors govern the subdivision of such lands, along with the densities and intensities described below. The effect is that subdivisions of agricultural and resource conservation lands are rare. The following Agricultural and Conservation land use categories are established:
  - **Agriculture and Conservation 1:** This land use category is established for agricultural, and conservation uses, including nonresidential structures necessary for agricultural operations at a floor area ratio (FAR) of .01 to .091F 1, and housing at a density of one dwelling unit per 31 to 60 acres.
  - **Agriculture and Conservation 2:** This land use category is established for agricultural, and conservation uses, including nonresidential structures necessary for agricultural operations at a floor area ratio (FAR) of .01 to .091, and housing at a density of one dwelling unit per 10 to 30 acres.
  - **Agriculture and Conservation 3:** This land use category is established for agricultural, and conservation uses, including nonresidential structures necessary for agricultural operations at a floor area ratio (FAR) of .01 to .091, and housing at a density of one dwelling unit per 2 to 9 acres, with an emphasis on affordable housing.
- **CD-8.5 Establish Agricultural Land Use Categories.** Agriculture land use categories are established to preserve and protect a variety of agricultural uses, and to enable the potential for agricultural production and diversification. Historically, 60 acres has been the minimum parcel size for most agricultural lands in the county. Various policies regarding agricultural productivity, water availability, effects on water quality, and other factors govern the subdivision of such lands, along with the intensities described below. The effect is that subdivisions of agricultural lands are rare. The following Agricultural land use categories are established:

- **Agriculture 1.** This land use category is established for agricultural uses, including nonresidential structures necessary for agricultural operations at a floor area ratio (FAR) of .01 to .091, and housing with a density of one dwelling unit per 31 to 60 acres.
- **Agriculture 2.** This land use category is established for agricultural uses, including nonresidential structures necessary for agricultural operations at a floor area ratio (FAR) of .01 to .091, and housing with a density of one dwelling unit per 10 to 30 acres.
- **Agriculture 3.** This land use category shall be provided for agricultural uses, including nonresidential structures necessary for agricultural operations at an FAR of .01 to .091, and housing with a density of one dwelling unit per 1 to 9 acres.
- **CD-8.6 Establish Residential Land Use Categories and Densities.** Residential development is designated at a full range of densities, with an emphasis on providing more affordable housing including incentives for low and very low-income units, while also recognizing that physical hazards, fire risk, development constraints, protection of natural resources, and the availability of public services and facilities can limit housing development in some areas.

**Marin County Code, Title 22 (Development Code).** Articles I through VIII contain definitions, the County's development code enactment and applicability, zoning districts and allowable land uses, site planning and general development regulations, land use and development permits, the County Subdivision Ordinance, and describe the authority and responsibilities of County staff and officials in the administration of the Development Code. These authorities and responsibilities are in addition to those vested in the Board of Supervisors.

**Marin County Local Coastal Land Use Plan (LCP).** This Plan, whose current version was adopted in 2021, establishes the Land Use of coastal areas of Marin County. The purpose of the LCP is to carry out the coastal resource protection policies of the California Coastal Act of 1976. Each coastal city and county in California is required by that law to prepare and implement an LCP for its portion of the Coastal Zone. Like other counties in California, Marin County has also adopted a comprehensive land use plan for its entire jurisdiction area, which extends landward well beyond the Coastal Zone boundary. Adopted in 2007, the Marin Countywide Plan (CWP) and its related Community Plans guide land development throughout the unincorporated county. In the Coastal Zone, the LCP takes precedence over the County plans.

**The Marin County Airport Land Use Commission.** The Commission adopted the Airport Land Use Plan in 1991. The plan sets forth land use compatibility criteria, compatibility zones, development standards, and policies pertaining to noise, safety, airspace protection, and overflight standards, and establishes the planning boundaries that define height, tall structures, noise, and safety zones for policy implementation, including:

- **Policy NC-1.1 Land Use Compatibility.** The Airport Land Use Commission shall adopt the guidelines contained in Tables 3. 3 and 4 .1 [of the Airport Land Use Plan] for considering various types of land uses and zoning changes in the environs of Gness Field.
- **Policy NC-1.4 Residential Land Use.** New residential development should be prohibited within the 60 dB CNEL noise contour.

The Marin County Airport Land Use Commission reviews proposals for general plans, specific plans, zoning ordinances, and land use development proposals in the vicinity of Gness Field Airport to ensure that future land uses in the surrounding area remain compatible with the realistically foreseeable, ultimate potential aircraft activity.<sup>5</sup>

**Marin County Multi-Jurisdiction Local Hazard Mitigation Plan.** This plan was adopted in 2018. Marin County and its incorporated cities have implemented land use plans and development policies to direct growth away from hazardous conditions. For example, as required by state law, the County and each incorporated city have a general plan with a safety element that identifies hazards affecting the unincorporated county and incorporated cities. The County and the incorporated cities implement planning policies, such as floodplain ordinances and building codes, restricting new development in hazard areas and increasing construction requirements in hazard areas.<sup>6</sup>

**Marin County Local Community Plans.** Community plans and other area plans contain policies for land use and development related specifically to a local area. They are intended to reflect the built form of local communities and are used to evaluate discretionary planning applications. The County has 18 Community Plans and eight other area plans and amendments that contain policies for land use and development related specifically to a particular local area. These policies reflect the local communities for use in evaluating discretionary planning applications.<sup>7</sup>

### 13.3 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to land use and planning that could result from the Marin County Housing Element and Safety Elements Update and discusses components of the Project that would avoid or reduce those potential impacts.

#### 13.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to land use and planning if it would:

- A. Physically divide an established community; or

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<sup>5</sup>Airport Land Use Plan. Marin County Airport Land Use Commission. <https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/landuseplan/airport-land-use-plan--marin-county-airport-gness-field.pdf>. Accessed 5/13/2022

<sup>6</sup>County of Marin Community Development Agency. <https://www.marincounty.org/depts/cd/divisions/planning/lhmp>. Accessed 9/27/2022.

<sup>7</sup>County of Marin Community Development Agency, "Community and Area Plans," <https://www.marincounty.org/depts/cd/divisions/planning/plans-policies-and-regulations/community-and-area-plans>, accessed 4/27/22. It should be noted that the Muir Beach Community Plan does not contain land use/development policies but instead contains information on the history, background, land use, and infrastructure of Muir Beach.

B. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

### 13.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

#### **Housing Element Update Goals, Policies and Programs**

The following goals are included in the Housing Element Update. Goals 1 and 2 are the same as Goals 1 and 2 in the existing 2015-2023 Housing Element and have been carried forward to the Housing Element Update. Goal 3 is almost the same except for a minor revision noted with ~~strikeout~~ for deleted text. Goal 4 is a new policy proposed for this Housing Element Update and is indicated as such with underline for the new text.<sup>8</sup>

- Housing Goal 1: Use Land Efficiently  
*Use Marin's land efficiently to meet housing needs and implement smart and sustainable development principles.*  
(Same Goal 1 carried forward from 2015-2023 Housing Element)
- Housing Goal 2: Meet Housing Needs through a Variety of Housing Choices  
*Respond to the broad range of housing needs in Marin County by supporting a mix of housing types, densities, affordability levels, and designs.*  
(Same Goal 2 carried forward from 2015-2023 Housing Element)
- Housing Goal 3: Ensure Leadership and Institutional Capacity  
*Build and maintain local government institutional capacity and monitor accomplishments ~~so as~~ to respond to housing needs effectively over time.*  
(Minor revision to Goal 3 carried forward from 2015-2023 Housing Element)
- Housing Goal 4: Combat Housing Discrimination, Eliminate Racial Bias, Undo Historic Patterns of Segregation  
*Lift barriers that restrict access in order to foster inclusive communities and achieve racial equity, fair housing choice, and opportunity for all Californians.*  
(New goal)

For each of these goals, the Housing Element Update states policies to guide action by decision making bodies (such as the Board of Supervisors), identifies implementing programs to be used to implement each policy, and describes the specific actions, timeline, funding sources, and the County department primarily responsible for implementing the individual program, plus relevant housing policies for cross-referencing. For example, for Housing Goal 1 (use land efficiently), Policy 1.1 is to "Enact policies that encourage efficient use of land to foster a range of housing types in our community." Policy 1.2 is to "Maintain an adequate inventory of residential and mixed-use sites to fully accommodate the County's RHNA by income category throughout the planning period." Implementing programs for Policy 1.1 include Program 1 to ensure adequate sites for the RHNA and monitor development of sites for no net loss, and Program 3 regarding replacement housing requirements. The implementing program for Policy

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<sup>8</sup>The complete lists of Housing Element Update goals, policies, and programs are on pages 195 through 224 of the Housing Element Update and are included in the Appendix B of this Draft EIR.

1.2 is Program 1. For new Housing Goal 4 (combat housing discrimination, eliminate racial bias, undo historic patterns of segregation), all three policies are new: Policy 4.1 is to protect tenants from unlawful evictions and economic displacement and promote greater education on tenants' rights; Policy 4.2 is to educate the community about fair housing rights through proactive outreach; and Policy 4.3 is to ensure equal access to housing opportunities through County land use, development, and housing policies. There are 11 new programs proposed in the Housing Element Update. Many of the remaining programs have been carried forward from the 2015 Housing Element to continue the implementation of existing programs. Chapter 3, Projection Description, of this EIR provides further detail.

### **Safety Element Update Goals, Policies, and Programs**

The 2007 CWP does not contain a standalone "Safety Element" but contains policies and programs that address the required contents of a safety element, in compliance with State law. These policies and programs are contained in Section 2.6 – Environmental Hazards, of the Natural Systems and Agriculture Element, and address protection of people from unreasonable risks associated with disasters, including earthquakes, floods, fires, and landslides.

The currently adopted policies and programs in Section 2.6 – Environmental Hazards address geologic, flooding, and wildfire hazards and are being updated to comply with new state requirements to include climate change and resiliency planning, as well as new requirements to further address sea level rise, flooding, and wildfire hazards. The proposed "Safety Element Update" includes new policies and programs, and revisions to already adopted Environmental Hazards policies and programs, in compliance with new State laws. Collectively, this content comprises the Safety Element Update, which is part of the Project being evaluated in this EIR. Updated Section 2.6 of the CWP is now considered the County's "Safety Element," as noted in paragraph one of that section.

The following goals are included in the Safety Element Update with revisions noted with ~~strikeout~~ for deleted text and underline for new text. Goal EHS-1 and Goal EHS-6 are new goals. Goal EHS-2, Goal EHS-3, Goal EHS-4, and Goal EHS-5 are revised goals incorporating existing 2007 CWP Goal EHS-1, Goal EHS-2, Goal EHS-3, and Goal EHS-4, respectively<sup>9</sup>:

- Goal EHS 1: Equitable Community Safety Planning  
Create equitable processes for executing climate resilience and community safety policies, where justice is central to policy design and implementation.
- Goal EHS-2: Disaster Preparedness, Response and Recovery  
Support continuing public awareness of hazards, including avoidance, disaster preparedness, and emergency response procedures. Ensure readiness in and after emergency situations and create an effective evacuation route network.
- Goal EHS-23: Safety from Geologic and Seismic Hazards  
~~Protect people and property from risks associated with seismic activity and geologic conditions.~~ Minimize the loss of life, injury, and property damage due to seismic and related geological hazards.

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<sup>9</sup>The complete lists of Safety Element Update goals, policies, and programs are included in the Appendix B of this Draft EIR.

- ~~Goal EHS-34 Safety from Flooding and Inundation~~  
Protect people and property from risks associated with flooding. (Also see the Public Facilities and Water Resources sections.) Minimize the loss of life, injury, and property damage due to flooding hazards.
- Goal EHS-5: Safety From ~~Fires~~ Wildfire  
Protect people and property from hazards associated with wildland and structure fires.
- Goal EHS-6: Resilience to Climate Change  
Manage the threat of climate risks to the current and future Marin community.

For each of these goals, the Safety Element Update states policies to guide action by decision making bodies (such as the Board of Supervisors), identifies programs to be used to implement the policy, and describes the responsibilities, potential funding priorities, and estimated time frames, dependent upon the availability of adequate funding and staff resources. For example, for Goal EHS-1 – Equitable Community Safety Planning, Policy EHS-1.1 is “Safety Planning for Everyone,” which calls for prioritizing involvement of vulnerable communities, as identified in the Marin County Climate Change Vulnerability Assessment, in community safety planning. Policy EHS-1.1 is intended to reduce exposure to natural and human-caused safety risks through increased preparedness reduced recovery times. Policy EHS-1.2 is “Community-Led Safety Programs,” which calls for placing community organizations and civic leaders at the forefront of the community safety planning process. Implementing programs under these policies include Program EHS-1.1.a, to develop a vulnerable communities database, and Program EHS-1.1.b, which calls for development of an outreach program for vulnerable populations. Chapter 3 (Projection Description) provides further detail.

### 13.3.3 Impacts and Mitigation Measures

The following analysis is provided at a programmatic level consistent with the level of detail of the proposed Project. This discussion focuses on the proposed Project’s conformity with adopted County policies.

#### **Impact 13-1: Project Potential for Physically Dividing an Established Community.**

*[Threshold of Significance (a)]* The analyses and findings in this EIR indicate that development facilitated by the Project would not physically divide an established community. For this impact evaluation, the established communities are the seven Planning Areas in unincorporated Marin County: Novato, Las Gallinas Valley, San Rafael Basin, Upper Ross Valley, Lower Ross Valley, Richardson Bay, and West Marin. The Planning Areas are described and mapped in Chapter 3, Project Description, of this EIR.

The Housing Element Update involves designating sites for future housing ranging from 0.10 to 522 acres in size in approximately 100 locations. The Safety Element Update proposes policies and implementing programs to protect the county from environmental hazards. No development sites or major infrastructure improvements are planned that would divide existing communities. The Project goals, policies, and implementing programs have been purposely formulated to avoid physically dividing any established communities in unincorporated Marin County and to comply with applicable State, regional, and local plans and programs while meeting the County’s RHNA. The Project goals, policies, and implementing programs do so through programs that facilitate development on sites that can accommodate additional housing units (Program 1: Adequate Sites for RHNA and Monitoring of No Net Loss), redevelopment of existing sites (Program 1: Adequate Sites for RHNA and Monitoring of No Net Loss and



Program 3: Replacement Housing), efficient use of land zoned for multi-unit development (Program 6: Efficient Use of Multi-Unit Land), and small-scale development, such as ADUs, on existing residential and non-residential sites (Program 4: Accessory Dwelling Units, Program 5: SB 9 Mapping Tool, and Program 7: Religious and Institutional Facility Housing Overlay). The Project would not divide an established community, and the impact would be ***less-than-significant***.

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**Impact 13-2: Project Consistency with Land Use Plans, Policies, and Regulations Adopted for the Purpose of Avoiding or Mitigating Environmental Effects.** [*Threshold of Significance (b)*] The proposed Project is comprised of updates to the Housing Element and Safety Element of the 2007 CWP in compliance with the requirements for General Plans in State Planning and Zoning Law; associated amendments to other elements in the CWP as necessary to ensure consistency; and amendments to the Marin County Code to provide for effective implementation of the project (collectively the “Project”), as described in more detail in Chapter 3, Project Description, of this EIR.

The Housing and Safety Element updates to the CWP establish the goals, policies, and programs that will provide County staff and discretionary bodies with a foundation for decisions related to long-range planning for housing development and safety, including the effects of climate change. The overarching goal of the program is to revise the adopted Housing and Safety Elements to create a policy framework for:

1. facilitating new housing growth throughout the unincorporated County area in response to the region’s need for more affordable and market rate housing, and meeting the County’s 2023-2031 Regional Housing Needs Allocation (RHNA);
2. responding to the broad range of housing needs in Marin County by supporting a mix of housing types, densities, affordability levels, and designs;
3. promoting healthy neighborhoods that incorporate best practices related to land use, racial equity, mobility, housing, affordability, safety, environmental justice, community services, and design;
4. combating housing discrimination, eliminating racial bias, undoing historic patterns of segregation, and lifting barriers that restrict access in order to foster inclusive communities and achieve racial equity;
5. engaging residents and stakeholders to ensure equitable and inclusive processes, policies, investments, and service systems;
6. establishing new CWP goals, policies, and programs to include climate change adaptation and resiliency planning, sea level rise, and additional wildfire measures, and providing direction to improve emergency preparedness, response, and recovery; developing strategies that help people, infrastructure, and community assets adapt to and recover from evolving climate threats and vulnerabilities, and from natural and human-caused hazards;
7. developing a Safety Element that meets all of the requirements of Government Code Section 65302(g), and which reflects State and local regulations for specific hazards, with the intent of protecting people and key infrastructure from damage resulting from an environmental hazard;

8. identifying communities most vulnerable to climate change impacts and establish new goals, policies, and programs for equitable public safety, emergency preparedness, response and recovery; and
9. embracing technology and innovative practices to create smart, sustainable cities and adaptable infrastructure systems.

Amendments to the CWP and County Code would be necessary to implement the programs identified in the Housing Element Update and Safety Element Update. These would include, but may not be limited to, the following:

1. Changes to the land use designations (where needed) to accommodate the development intensity needed to satisfy the RHNA;
2. Changes to policies and programs to remove barriers to residential development (adjustment to the City-Center/Inland Rural boundaries, modify policies related to density limitations, modify text to clarify the relationship between the CWP and community plans, replace the Housing Overlay District with a Housing Element Overlay, etc.);
3. Changes to the zoning map land use designations to accommodate the development intensity needed to satisfy the RHNA; and
4. Zoning text amendments to ensure procedures and standards are in place to support development needed to satisfy the RHNA in compliance with State Law (Form Based Code).

The Project's consistency with specific environmental plans, programs, and regulations is discussed in the individual environmental topic chapters (e.g., Biological Resources, Air Quality, Greenhouse Gases). At this time, the proposed Project is inconsistent with the interrelated MTC/ABAG Plan Bay Area 2050, the CARB 2017 Scoping Plan, and the Marin County 2030 Climate Action Plan (CAP); however, the inconsistency is based primarily on the vehicle miles traveled (VMT) that would result from the State-mandated RHNA for unincorporated Marin County.

The Project identifies an inventory of potential housing sites, all of which would require site-specific County approvals before individual projects could be constructed. Currently, some of the housing sites conflict with 2007 CWP land use designations and with zoning, but the land use designations and zoning for the selected sites would be amended to allow for the number of housing units identified as part of the Project. Development of these sites would enable the County to meet its RHNA. All proposed CWP designation changes and zoning changes would be consistent with existing Marin County land use classifications as defined in the CWP and Zoning Code (see Section 13.1.2 above). The County intends to redesignate and rezone potential housing sites by January 31, 2023, to allow for new housing.

For the foregoing reasons, the Project would not conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating environmental effects, and this impact would be ***less-than-significant***.

### **Cumulative Land Use and Planning Impacts**

Housing element and safety element updates are being required by the California Department of Housing and Community Development (HCD) concurrently for all communities in the Bay Area. The proposed Marin County Housing and Safety Elements Update project would not make a cumulatively considerable contribution to a significant cumulative land use impact. The Project goals, policies, and implementing programs have been purposely formulated to avoid

physically dividing an established community and to comply with applicable State, regional, and local plans and programs while meeting RHNA mandates.

All development facilitated by the Project would require site-specific County approvals before individual projects could be constructed. All proposed CWP designation changes and zoning changes would be consistent with existing Marin County land use classifications as defined in the 2007 CWP and Zoning Code (see Section 13.1.2 above). The County intends to redesignate and rezone potential housing sites by January 31, 2023, to allow for new housing.

No cumulatively considerable contribution to a significant cumulative land use impact has been identified.

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## 14. MINERAL RESOURCES

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Mineral Resources. <i>Would the project:</i></b>				
a) <i>Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?</i>				X
b) <i>Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?</i>				X

This chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts.

### 14.1 ENVIRONMENTAL SETTING

Marin County is part of the North San Francisco Bay Production-Consumption Region, along with Sonoma and Napa counties, which is one of the areas in California in which the State has tracked mineral resources use and supplies since the 1980s. As part of its responsibility to inventory mineral resources throughout the State and provide that information to local jurisdictions to assist in land use planning, the California State Mining and Geology Board determined the North San Francisco Bay Production-Construction Region to be a region where the majority (95 percent or more) of the construction aggregate produced in the region was consumed in the region and, therefore, it is of regional significance.<sup>2</sup> In the North San Francisco Bay region, particular emphasis is given to materials that can be used for construction, such as sand, gravel, and crushed rock (often referred to as “aggregate”) because of their importance to the economy for providing bulk and strength to concrete and related materials as well as for use as subbase, drain rock, and fill.

The State Mining and Geology Board regularly updates estimates of the availability of these mineral resources (i.e., “a mineral lands inventory”) to determine if projected future demands can be met and how soon or when these resources may be depleted. Because urban expansion has resulted in a decline in the availability of many important mineral resources, this information is important for local planning decisions.

<sup>1</sup>State CEQA Guidelines, Appendix G, item XII (a and b).

<sup>2</sup>State of California, Department of Conservation, California Geological Survey, Special Report 205, “Update of Mineral Land Classification: Aggregate Materials in the North San Francisco Bay Production-Consumption Region, Sonoma, Napa, Marin, and Southwestern Solano Counties, California,” 2013.

### 14.1.1 Mineral Resources in the County

Twelve sites in the Planning Area have been identified for mineral resources, including eight sites designated by the State and four sites permitted by the County.<sup>3</sup>

The eight State-designated sites are:<sup>4</sup>

- Ring Mountain, Tiburon;<sup>5</sup>
- two areas near Black Point in eastern Marin County, divided into two subsectors identified as D-1 and D-2 and covering 357 acres (Sector D, the “sector” notation is from the State);
- a 145-acre area on Point San Pedro in eastern Marin County (Sector I), also known as the Dutra San Rafael Rock Quarry;
- a 49-acre area on Burdell Mountain, two miles north of the City of Novato (Sector J);
- a 15-acre area in Millerton Gulch, about 3.5 miles north of Point Reyes Station (Sector L);
- a 36-acre area in upper Bowman Canyon on Burdell Mountain, about three miles northwest of Novato (Sector M); and
- an 80-acre area on Burdell Mountain, about two miles north of the City of Novato in Marin County (Sector V).

The four County-permitted sites are:<sup>6</sup>

- Nicasio Quarry – 6.4-acre portion of a 375-acre property north of Nicasio Square;
- Lawson’s Landing Quarry – two sites totaling 39 acres on open coastal dunes about  $\frac{3}{4}$  miles northeast of Dillon Beach;
- Martinoni Quarry – 8.5-acre site one mile north of Fallon-Two Rock Road, on Martinoni Road; and
- Redwood Landfill Quarry – 50-acre site about four miles north of Novato.

In addition, some mineral resource areas (or parts) in the North San Francisco Bay Region have been depleted by mining or otherwise lost to urbanization. According to the State Mining and

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<sup>3</sup>Marin Countywide Plan, “Map 3-5, Location of Mineral Resource Preservation Sites”; County of Marin, Marin GeoHub, <https://gisopendata.marincounty.org/datasets/MarinCounty::mineral-resource-preservation-site/explore?location=38.016807%2C-122.674500%2C10.98>, accessed 5/31/22.

<sup>4</sup>Marin Countywide Plan, November 6, 2007, p. 3.7-2; State of California, Department of Conservation, State Mining and Geology Board (SMGB) Designation Report No. 17, “Updated Designation of Regionally Significant Aggregate Resources in the North San Francisco Bay Production-Consumption Region, Marin, Napa, Sonoma, and Southwestern Solano Counties, California,” January 2018, pp. 10-11. [https://www.conservation.ca.gov/smgb/reports/Documents/Designation\\_Reports/No.SFBay\\_Designation\\_Report\\_No.17.pdf](https://www.conservation.ca.gov/smgb/reports/Documents/Designation_Reports/No.SFBay_Designation_Report_No.17.pdf), accessed 5/31/22.

<sup>5</sup>This site is identified in the Countywide Plan as a Scientific Resource Zone and is not considered a production site due to its rare geologic formations. Marin Countywide Plan, p. 3.7-2.

<sup>6</sup>Marin Countywide Plan, “Map 3-5, Location of Mineral Resource Preservation Sites.”

Geology Board, the following sectors (or subsectors) in Marin County have had their designation status terminated (or in some instances only a portion has been terminated):<sup>7</sup>

- Sector D-2b – 71 acres in the northern portion of the sector (the southern end of a prominent ridge in the easternmost part of the City of Novato);
- Sector J – 49-acre sector at the eastern end of Burdell Mountain; and
- Sector V-1b – six acres of this sector on Burdell Mountain.

### 14.1.2 Candidate Housing Sites

As discussed in Chapter 3, Project Description, the Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Section 3.4.2(c) in Chapter 3, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of “candidate housing sites,” which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts.

These sites are generally located along the west side of the county (the Coastal Corridor) from Tomales south to Stinson Beach; along the east side from the Novato area south to Marin City (the Baylands and City-Centered Corridors); around Nicasio; in the Lucas Valley-Marino area; and in the Lagunitas-Forest Knolls/San Geronimo/Woodacre area (the Inland Rural Corridor). Based on County database and mapping sources, none of the proposed candidate housing sites are located in a State- or County-designated mineral resource or preservation zone.<sup>8</sup>

## 14.2 REGULATORY SETTING

### 14.2.1 State Regulations and Laws

**Surface Mining and Reclamation Act.** The Surface Mining and Reclamation Act of 1975 (SMARA) establishes State policy for regulation of surface mining and reclamation in order to provide for: (1) the extraction of essential minerals; (2) the reclamation of mined lands; (3) the

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<sup>7</sup>State of California, Department of Conservation, Mine Reclamation, Statutes & Regulations, January 2022, p. 85, <https://www.conservation.ca.gov/index/Documents/DMR-SR-1%20Web%20Copy.pdf>, accessed 5/31/22; and SMGB Designation Report No. 17, January 2018, pp. 11-12, [https://www.conservation.ca.gov/smgb/reports/Documents/Designation\\_Reports/No.SFBay\\_Designation\\_Report\\_No.17.pdf](https://www.conservation.ca.gov/smgb/reports/Documents/Designation_Reports/No.SFBay_Designation_Report_No.17.pdf), accessed 5/31/22.

<sup>8</sup>Marin Countywide Plan, “Map 3-5, Location of Mineral Resource Preservation Sites”; Marin County Housing & Safety Elements, “Map Atlas: Candidate Housing Sites and Existing Conditions and Constraints,” <https://www.marincountyatlas.org/natural-resources>, accessed 5/31/22; County of Marin, Marin GeoHub, <https://gisopendata.marincounty.org/datasets/MarinCounty::mineral-resource-preservation-site/explore?location=38.016807%2C-122.674500%2C10.98>, accessed 5/31/22; Google Earth.

prevention or minimization of adverse effects on the environment; and (4) the protection of public health and safety. Standards and reporting requirements under SMARA apply to “areas of regional significance,” which are areas designated by the State Mining and Geology Board (the Board) as containing deposits of minerals of prime importance in meeting future needs of a particular region of the state (i.e., the permanent loss of these minerals would be more than locally significant) and “areas of statewide significance,” which are areas designated by the Board as containing deposits of minerals of prime importance in meeting future needs of the state (i.e., the permanent loss of these minerals would be more than locally or regionally significant).

**Public Resources Code.** Public Resources Code (PRC) sections 2710 et seq. contain requirements for areas designated by the State Mining and Geology Board as having important minerals in the event that a lead agency (such as the County of Marin) is considering development that might threaten mineral extraction in a designated area. Requirements include preparation and submittal of documents for State Geologist and Mining and Geology Board review that (1) specify the reasons for permitting the proposed use; (2) evaluate the area to ascertain the significance of the mineral deposit; (3) discuss the balancing of mineral values against alternative land uses; (4) describe the lead agency's compliance with its mineral resource management plan (MRMP); and (5) provide environmental review as may be required under CEQA.

#### **14.2.2 Regional/Local Regulations**

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses mineral resources issues. Applicable adopted Countywide Plan policies and mineral resources map include:

##### **Built Environment Element – Mineral Resources policies**

- Policy MIN-1.1: Preserve Mineral Resource Sites. Protect State-designated Class 2 production sites from encroachment by temporary or permanent land uses that would inhibit timely mineral extraction to meet market demand.
- Policy MIN-1.2: Remove Sites from State Listing. Petition the State to declassify mining sites from the State list, if a site has been reclaimed.
- Policy MIN-1.3: Buffer Extraction Areas and Incompatible Land Uses. Create sufficient buffers between designated mineral resource sites or potential extraction areas and uses incompatible with mining, such as housing.
- Policy MIN-1.4: Require Best Available Management Practices. Require best available management practices through the use-permit process to minimize or avoid nuisances, hazards, or adverse environmental impacts.
- Policy MIN-1.5: Reclaim Mined Lands. Ensure that all mining operations provide for adequate reclamation of mined lands, including erosion control, revegetation, maintenance of settling ponds, and control of contaminants.
- Policy MIN-1.6: Address Operational Issues. When a use permit comes up for renewal, or if a property owner amends a surface mining and quarrying permit, the environmental impacts of the project shall be evaluated and mitigated through the California Environmental Quality Act and the permit process.



- Policy MIN-1.7: Study Mineral Resource Areas. In order to respond to changing needs, a study will be conducted to evaluate whether to provide more flexibility in land uses in areas subject to State designations for mineral extraction. The study will include the steps necessary to change mineral policies in order to comply with the requirements of the State Surface Mining and Reclamation Act.
- 2007 CWP “Map 3-5, Location of Mineral Resource Preservation Sites.”

**Marin County Code.** Chapter 23.06 (Regulation and Control of Surface Mining and Quarrying Operations) describes County regulations to ensure continued availability of important mineral resources, including the control of surface mining and quarrying operations and the reclamation of lands affected by such operations.

### 14.3 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to mineral resources that could result from the Project and discusses Project policies and actions that would avoid or reduce those potential impacts.

#### 14.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to mineral resources if it would:

- A. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- B. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

#### 14.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

Neither the Housing Element Update nor the Safety Element Update contains policies or implementing programs that directly address CEQA-defined mineral resources impacts.

#### 14.3.3 Impacts and Mitigations

The Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Chapter 3, Project Description, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of “candidate housing sites,” which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts.

The mineral resources evaluation applies to the candidate housing sites and is provided at a programmatic level consistent with the level of detail of the proposed Project.

**Impact 14-1: Loss of Availability of Known Mineral Resources of Value to Regional and State Residents.** [Threshold of Significance (a)] As discussed in section 14.1.1, the State has designated eight locations in the Planning Area as containing mineral resources of value to the

region and/or the State, and four locations have been permitted by the County for mineral operations. As discussed in section 14.1.2, no candidate housing sites are proposed for development on any of these 12 sites. Therefore, there would be **no impact** on known mineral resources of value to regional and State residents as a result of the Project.

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**Impact 14-2: Loss of Availability of a Locally Important Mineral Resource Recovery Site Delineated on a Local General Plan, Specific Plan, or Other Land Use Plan.** [Threshold of Significance (b)] As discussed above in section 14.1.1, there are four locations in the Planning Area identified as containing mineral resources of value to the County and which have been permitted by the County for mineral operations. As discussed in section 14.1.2, no candidate housing sites are proposed for development on any of these sites. Therefore, there would be **no impact** on known mineral resources of value to regional and State residents as a result of the project.

### **Cumulative Mineral Resources Impacts**

Mineral resource extraction in the County occurs in four locations as identified in Section 14.1.1 above. As described in Impact 14-1, and Impact 14-2, the Project would not contribute to cumulative mineral resources impacts. Therefore, the Project is not expected to result in significant cumulative impacts to mineral resources or mineral resource recovery sites. Potential cumulative impacts would be **less than significant**.

## 15. NOISE

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Noise. Would the project result in:</b>				
a) <i>Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?</i>	X (part)		X (part)	
b) <i>Generation of excessive groundborne vibration or groundborne noise levels?</i>			X (part)	X (part)
c) <i>For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?</i>			X	
<p>Note: Certain environmental issue areas address both temporary and permanent effects in a single checklist question. Where necessary, the table identifies that separate findings have been made for “part” of the issue area (e.g., the impact may be potentially significant for temporary effects but less than significant for permanent effects, or vice versa). Refer to Section 13.3 for full impact discussions and disclosures.</p>				

This chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project,<sup>2</sup> and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts.

### 15.1 ENVIRONMENTAL SETTING

#### 15.1.1 Fundamentals of Environmental Acoustics

Noise is generally defined as unwanted sound and is widely recognized as a form of environmental degradation. Airborne sound is the rapid fluctuation of air pressure above and below atmospheric pressure. The frequency (pitch), amplitude (intensity or loudness), and

<sup>1</sup>State CEQA Guidelines, Appendix G, item XIII (a through c).

<sup>2</sup>The noise and vibration analysis contained in Section 15.3 is based on the construction and operation of 10,993 dwelling units (candidate housing sites), which are more than the 5,214 dwelling units that would be facilitated by adoption of the Housing Element Update (project sites inventory), and the 3,569 dwelling units that are required by the Regional Housing Needs Allocation (RHNA). The noise analysis’ assumptions, which provide a conservative assessment of potential impacts, are consistent with the land use and transportation modeling assumptions used in the Air Quality (Chapter 6), Greenhouse Gas / Energy Chapter (Chapter 10), and Transportation Chapter (Chapter 18).

duration of a sound all contribute to the effect on a listener, or receptor, and whether or not the receptor perceives the sound as “noisy” or annoying.

Pitch is the height or depth of a tone or sound and depends on the frequency of the vibrations by which it is produced. Sound frequency is expressed in terms of cycles per second, or Hertz (Hz). Humans generally hear sounds with frequencies between 20 and 20,000 Hz and perceive higher frequency sounds, or high pitch noise, as louder than low-frequency sound or sounds low in pitch. Sound intensity or loudness is a function of the amplitude of the pressure wave generated by a noise source combined with the reception characteristics of the human ear. Atmospheric factors and obstructions between the noise source and receptor also affect the loudness perceived by the receptor. Sound pressure levels are typically expressed on a logarithmic scale in terms of decibels (dB). A dB is a unit of measurement that indicates the relative amplitude (i.e., intensity or loudness) of a sound, with 0 dB corresponding roughly to the threshold of hearing for the healthy, unimpaired human ear.

Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 dBs represents a ten-fold increase in acoustic energy, while 20 dBs is 100 times more intense, 30 dBs is 1,000 times more intense, and so on. In general, there is a relationship between the subjective noisiness or loudness of a sound and its intensity, with each 10 dB increase in sound level perceived as approximately a doubling of loudness. Due to the logarithmic basis, decibels cannot be directly added or subtracted together using common arithmetic operations:

$$50 \text{ decibels} + 50 \text{ decibels} \neq 100 \text{ decibels}$$

Instead, the combined sound level from two or more sources must be combined logarithmically. For example, if one noise source produces a sound power level of 50 dBA, two of the same sources would combine to produce 53 dB as shown below.

$$10 * 10 \log \left( 10^{\left(\frac{50}{10}\right)} + 10^{\left(\frac{50}{10}\right)} \right) = 53 \text{ decibels}$$

In general, when one source is 10 dB higher than another source, the quieter source does not add to the sound levels produced by the louder source because the louder source contains ten times more sound energy than the quieter source.

### 15.1.2 Sound Characterization

Although humans generally can hear sounds with frequencies between 20 and 20,000 Hz, most of the sounds humans are normally exposed to do not consist of a single frequency, but rather a broad range of frequencies perceived differently by the human ear. In general, humans are most sensitive to the frequency range of 1,000–8,000 Hz and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. Instruments used to measure sound, therefore, include an electrical filter that enables the instrument’s detectors to replicate human hearing. This filter, known as the “A-weighting” or “A-weighted sound level,” filters low and very high frequencies, giving greater weight to the frequencies of sound to which the human ear is typically most sensitive. Most environmental measurements are reported in dBA, meaning decibels on the A-scale. See Table 15-1 for a list common noise sources and their A-weighted noise levels.

**Table 15-1:  
Typical Noise Levels**

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet flyover at 1,000 feet	105	
	100	
Gas lawn mower at 3 feet	95	
	90	
Diesel truck at 50 feet at 50 mph	85	Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noise urban area, daytime	75	
Gas lawnmower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area	65	Normal speech at 3 feet
Heavy traffic at 300 feet	60	
	55	Large business office
Quiet urban daytime	50	Dishwasher next room
	45	
Quiet urban nighttime	40	Theater, large conference room
Quiet suburban nighttime	35	
	30	Library
Quite rural nighttime	25	Bedroom at night
	20	
	15	Broadcast/recording studio
	10	
	5	
Typical threshold of human hearing	0	Typical threshold of human hearing

Source: Caltrans, 2013<sup>3</sup>

Sound levels are usually not steady and vary over time. Therefore, a method for describing either the average character of the sound or the statistical behavior of the variations over a period of time is necessary. The continuous equivalent noise level ( $L_{eq}$ ) descriptor is used to represent the average character of the sound over a period of time. The  $L_{eq}$  represents the level of steady-state noise that would have the same acoustical energy as the time-varying noise measured over a given time period.  $L_{eq}$  is useful for evaluating shorter time periods over the course of a day. The most common  $L_{eq}$  averaging period is hourly, but  $L_{eq}$  can describe any series of noise events over a given time period.

Variable noise levels are the values that are exceeded for a portion of the measured time period. Thus, the  $L_{01}$ ,  $L_{10}$ ,  $L_{50}$ , and  $L_{90}$  descriptors represent the sound levels exceeded 1%, 10%, 50%, and 90% of the time the measurement was performed. The  $L_{90}$  value usually corresponds to the background sound level at the measurement location.

When considering environmental noise, it is important to account for the different responses people have to daytime and nighttime noise. In general, during the nighttime, background noise levels are generally quieter than during the daytime but also more noticeable due to the fact that household noise has decreased as people begin to retire and sleep. Noise exposure over the course of an entire day is described by the day/night average sound level, DNL (or  $L_{dn}$ ), and the community noise equivalent level, or CNEL, descriptors. Both descriptors represent the 24-hour noise exposure in a community or area. For DNL, the 24-hour day is divided into a 15-hour daytime period (7 AM to 10 PM) and a 9-hour nighttime period (10 PM to 7 AM), and a 10 dB

<sup>3</sup>California Department of Transportation (Caltrans) 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol, Table 2-5.

“penalty” is added to measure nighttime noise levels when calculating the 24-hour average noise level. For example, a 45 dBA nighttime sound level would contribute as much to the overall day-night average as a 55 dBA daytime sound level. The CNEL descriptor is similar to DNL, except that it includes an additional 5 dBA penalty for noise events that occur during the evening time period (7 PM to 10 PM). The artificial penalties imposed during DNL and CNEL calculations are intended to account for a receptor’s increased sensitivity to noise levels during quieter nighttime periods.

### **15.1.3 Sound Propagation**

The energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out and travels away from the noise-generating source. The strength of the source is often characterized by its “sound power level.” Sound power level is independent of the distance a receiver is from the source and is a property of the source alone. Knowing the sound power level of an idealized source and its distance from a receiver, the sound pressure level at a specific point (e.g., a property line or a receiver) can be calculated based on geometrical spreading and attenuation (noise reduction) as a result of distance and environmental factors, such as ground cover (asphalt vs. grass or trees), atmospheric absorption, and shielding by terrain or barriers.

For an ideal “point” source of sound, such as mechanical equipment, the energy contained in a sound pressure wave dissipates and is absorbed by the surrounding environment as the sound wave spreads out in a spherical pattern and travels away from the point source. Theoretically, the sound level attenuates, or decreases, by 6 dB with each doubling of distance from the point source. In contrast, a “line” source of sound, such as roadway traffic or a rail line, spreads out in a cylindrical pattern and theoretically attenuates by 3 dB with each doubling of distance from the line source; however, the sound level at a receptor location can be modified further by additional factors. The first is the presence of a reflecting plane such as the ground. For hard ground, a reflecting plane typically increases A-weighted sound pressure levels by 3 dB. If some of the reflected sound is absorbed by the surface, this increase will be less than 3 dB. Other factors affecting the predicted sound pressure level are often lumped together into a term called “excess attenuation.” Excess attenuation is the amount of additional attenuation that occurs beyond simple spherical or cylindrical spreading. For sound propagation outdoors, there is almost always excess attenuation, producing lower levels than what would be predicted by spherical or cylindrical spreading. Some examples include attenuation by sound absorption in air; attenuation by barriers; attenuation by rain, sleet, snow, or fog; attenuation by grass, shrubbery, and trees; and attenuation from shadow zones created by wind and temperature gradients. Under certain meteorological conditions, like fog and low-level clouds, some of these excess attenuation mechanisms are reduced or eliminated due to noise reflection.

### **15.1.4 Noise Effects**

Noise effects on human beings are generally categorized as:

- Subjective effects of annoyance, nuisance, and/or dissatisfaction
- Interference with activities such as speech, sleep, learning, or relaxing
- Physiological effects such as startling and hearing loss

Most environmental noise levels produce subjective or interference effects; physiological effects are usually limited to high noise environments such as industrial manufacturing facilities or airports. Such physiological effects occur when the human ear is subjected to extremely high short-term noise levels (i.e., 140 dBA from an explosion) or from a prolonged exposure to high noise environments. For example, to protect workers from noise-induced hearing loss, the U.S. Occupational Safety and Health Administration (OSHA) limits worker noise exposure to 90 dBA as averaged over an 8-hour period (29 CFR 1910.95).

Predicting the subjective and interference effects of noise is difficult due to the wide variation in individual thresholds of annoyance and past experiences with noise; however, an accepted method to determine a person's subjective reaction to a new noise source is to compare it with the existing environment without the noise source, or the "ambient" noise environment. In general, the more a new noise source exceeds the ambient noise level, the more likely it is to be considered annoying and to disturb normal activities.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5 dB increase is generally perceived as a distinctly noticeable increase, and a 10 dB increase is generally perceived as a doubling of loudness that would almost certainly cause an adverse response from community noise receptors.

#### **15.1.5 Groundborne Vibration and Noise**

Vibration is the movement of particles within a medium or object such as the ground or a building. Vibration may be caused by natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or humans (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources are usually characterized as continuous, such as factory machinery, or transient, such as explosions.

As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency; however, unlike airborne sound, there is no standard way of measuring and reporting amplitude. Vibration amplitudes can be expressed in terms of velocity (inches per second) or discussed in dB units in order to compress the range of numbers required to describe vibration. Vibration impacts to buildings are usually discussed in terms of peak particle velocity (PPV) in inches per second (in/sec). PPV represents the maximum instantaneous positive or negative peak of a vibration signal and is most appropriate for evaluating the potential for building damage. Vibration can impact people, structures, and sensitive equipment. The primary concern related to vibration and people is the potential to annoy those working and residing in the area. Vibration with high enough amplitudes can damage structures (such as crack plaster or destroy windows). Groundborne vibration can also disrupt the use of sensitive medical and scientific instruments, such as electron microscopes.

Common sources of vibration within communities include construction activities and railroads. Groundborne vibration generated by construction projects is usually highest during pile driving, rock blasting, soil compacting, jack hammering, and demolition-related activities. Next to pile driving, grading activity has the greatest potential for vibration impacts if large bulldozers, large trucks, or other heavy equipment are used.

Groundborne noise is noise generated by vibrating building surfaces such as floors, walls, and ceilings that radiate noise inside buildings subjected to an external source of vibration. The vibration level, the acoustic radiation of the vibrating element, and the acoustical absorption of the room are all factors that affect potential groundborne noise generation.

#### **15.1.6 Existing Noise and Vibration Environment**

The 2007 Marin Countywide Plan (2007 CWP) identifies vehicle traffic as the primary contributor to the County's noise environment, with other local sources of noise including aircraft and airport operations, railroad and rapid transit facilities, industrial operations, and construction activities.<sup>4</sup>

Traffic noise levels are dependent on variables such as, but not limited to, the amount of traffic on the roadway, the percentage of cars and trucks on the roadway, and the speed at which vehicles are travelling. Major traffic noise sources in the County include highways such as State Route (SR) 1 (also known as Shoreline Highway), SR 37, SR 131, U.S. Highway 101, and Interstate 580 (I-580), and major roads such as Atherton Avenue, Lucas Valley Road, Novato Boulevard, Petaluma-Point Reyes Road, and Sir Francis Drake Boulevard. In addition to vehicle traffic, the Sonoma-Marín Area Rail Transit (SMART) District provides commuter and freight rail services in the eastern part of the County. Aviation facilities in the County include two general aviation airports (Gross Field County Airport and San Rafael Airport) and the Richardson Bay Heliport, all located in the eastern part of the County.

##### **15.1.6.1 Measured Ambient Noise Levels**

The existing ambient noise levels in the County were monitored in May 2022 (MIG 2022; see the Technical Noise Appendix H). Ambient noise levels were measured with a Larson Davis SoundTrack LxT Type 1 sound level meters. Ambient noise measurements were collected in 1-minute intervals. Conditions during the monitoring were generally clear and sunny during the daytime, with a daily high of approximately 70 degrees. Winds were generally calm to mild.

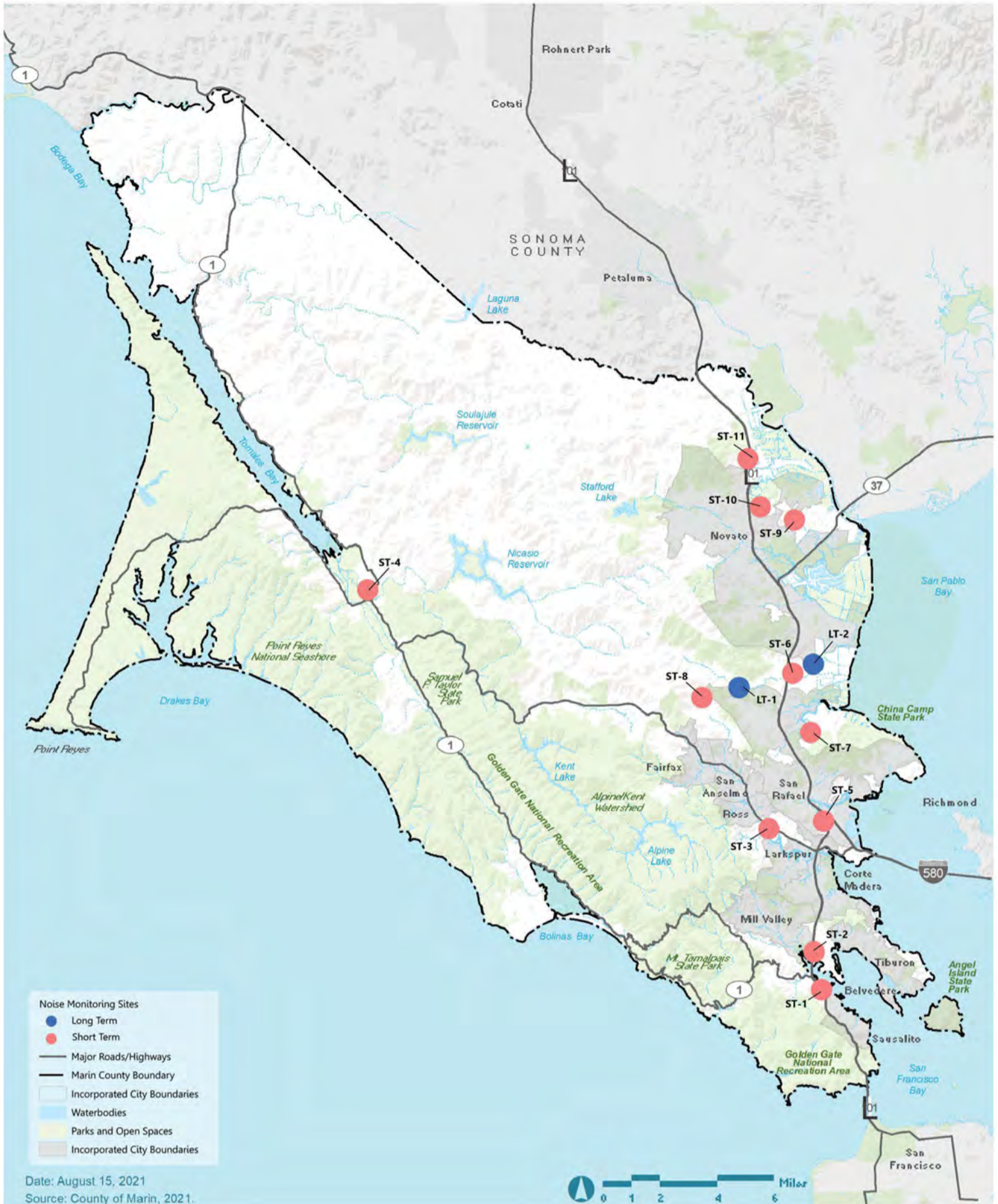
The ambient noise monitoring conducted for this EIR included two (2) long-term and 11 short-term (ST) measurements at locations selected to:

- Provide direct observations of existing noise sources at and near housing sites;
- Determine ambient noise levels at and near housing sites; and
- Evaluate potential changes in noise levels at sensitive receptors locations (see Section 15.1.7 below).
- The ambient noise monitoring locations are shown on Figure 15-1 and described below.
- ST-1 was at the north end of the parking lot at the Marin Gateway Shopping Center. This location was approximately 340 feet west of the center of U.S. 101. The ambient noise measured at location ST-1 is considered representative of daytime noise levels in the vicinity of commercial areas in the County, as well as areas near U.S. 101.

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<sup>4</sup>2007 Marin Countywide Plan, November 6, 2007, p. 3.10-1.





**Figure 15.1 - Ambient Noise Monitoring**

- ST-2 was adjacent to Milland Drive, approximately 35 feet from the center of Milland Drive and 360 feet west of the center of U.S. 101. The ambient noise measured at ST-2 is considered representative of daytime noise levels in residential areas of the County near U.S. 101.
- ST-3 was at 923 Sir Francis Drake Boulevard (in Kentfield), approximately 60 feet from the center of this roadway. The ambient noise measured at ST-3 is considered representative of daytime noise levels in commercial and mixed-use areas on major County roadways.
- ST-4 was at 299 A Street in Point Reyes Station. The ambient noise measured at ST-4 is considered representative of daytime noise levels in lower density/rural communities in the County.
- ST-5 was approximately 340 feet south of the intersection of Woodland Avenue and Auburn Street, approximately 15 feet from the center of Woodland Avenue. The ambient noise measured at ST-5 is considered representative of daytime noise levels near the SMART commuter corridor and major roadways.
- ST-6 was approximately 200 feet north of the intersection of St. Vincent Drive and Silvierra Ranches. This location was approximately 100 feet east of the center of the northbound/southbound portion of St Vincent Drive and approximately 1,000 feet east of the center of U.S. 101. The ambient noise levels measured at ST-6 are considered representative of daytime noise levels on underutilized religious/education housing sites in the County.
- ST-7 was approximately 145 feet north of the intersection of Northview Court and North San Pedro Road, approximately 50 feet west of the center of North San Pedro Road. The ambient noise measured at ST-7 is considered representative of daytime noise levels on underutilized public/institutional housing sites.
- ST-8 was 50 feet north of Butterfield Road and approximately 200 feet northwest of the intersection of Butterfield Road and the western driveway to San Domenico School. The ambient noise levels measured at ST-6 are considered representative of daytime noise levels on underutilized religious/education housing sites in the County.
- ST-9 was approximately 100 feet south of the intersection of Atherton Avenue and Olive Avenue, approximately 20 feet east of the center of Olive Avenue. The ambient noise measured at ST-9 is considered representative of vacant lands near major roadways in the County.
- ST-10 was approximately 190 feet east of the intersection of Atherton Avenue and Equestrian Court, approximately 35 feet south of Atherton Avenue. The ambient noise measured at ST-10 is considered representative of daytime noise levels near major roadways and U.S. 101 in the County.
- ST-11 was approximately 600 feet north of the intersection of Redwood Boulevard and the north driveway to 8171 Redwood Boulevard. This location was approximately 340 feet west of the center of Redwood Boulevard, approximately 480 feet west of U.S. 1010, and approximately 2,600 feet west of Gness Field Airport runway centerline. The

ambient noise measured at ST-11 is considered representative of daytime noise levels in areas undeveloped areas of the County near U.S. 101.

- LT-1 was approximately 220 feet east of the intersection of Mt Lassen Drive and Lucas Valley Road, approximately 50 feet north of Lucas Valley Road. The ambient noise measures at LT-1 is considered representative of the noise levels on underutilized public/institutional housing sites in the County
- LT-2 was on the St. Vincent's property, approximately 1,440 feet north of St. Vincent Drive SMART rail crossing and 250 feet west of the SMART rail line. The ambient noise measures at LT-2 is considered representative of the noise levels near the SMART rail line, as well as on underutilized religious/education housing sites in the County.

Based on observations made during the ambient noise monitoring, the existing noise environment in the County consists primarily of regional and local transportation noise sources, including vehicle traffic, rail, and aircraft overflights. Away from major arterial and collector roads, local residential/commercial land use operations and aircraft overflights are the primary contributors to the local ambient noise environment. Table 15-2 and Table 15-3 summarize the results of the ambient noise monitoring conducted for this EIR.

**Table 15-2:  
Measured Long-Term Ambient Noise Levels (dBA) in the Plan Area**

DaySite	Duration	L <sub>min</sub> <sup>(B)</sup>	L <sub>max</sub> <sup>(C)</sup>	Measured Hourly L <sub>eq</sub> Range (dBA) <sup>(A)</sup>		DNL <sup>(D)</sup>
				Daytime (7 AM - 10 PM)	Nighttime (10 PM - 7 AM)	
Monday, May 16, to Tuesday, May 17, 2022						
LT-1	24 Hours	32.9	84.8	51.6 – 60.6	39.3 – 56.7	58.7
Tuesday, May 17 to Wednesday, May 18, 2022						
LT-1	24 Hours	34.4	79.7	52.3 – 60.1	34.7 – 56.6	58.6
LT-2	24 Hours	25.8	71.7	31.9 – 47.8	28.9 – 45.0	47.2

Source: MIG, 2022 (see the Technical Noise Appendix H)

Values are the lowest and highest measured average hourly values during the listed time period.

Values are the lowest measured noise level during the monitoring session.

Values are the highest measured noise level during the monitoring session.

The 24-hour DNL exposure is computed applying a 10 dB penalty to measured nighttime noise levels. DNL exposure is computed over the following time periods: LT-1: 1 PM on May 16 to 12:59 PM on May 17 and 1 PM on May 17 to 12:59 PM on May 18; LT-2: 11 AM on May 17 to 10:59 AM on May 18.

**Table 15-3:  
Measured Short-Term Ambient Noise Levels (dBA) in the Plan Area**

Day/Site	Time Start	Duration	Measured Noise Level (dBA)		
			L <sub>eq</sub> <sup>(A)</sup>	L <sub>min</sub> <sup>(B)</sup>	L <sub>max</sub> <sup>(C)</sup>
Monday, May 16, 2022					
ST-1	8:20 AM	1 Hour	58.3	53.5	75.0
ST-2	9:30 AM	1 Hour	64.9	53.9	80.9
ST-3	11:00 AM	1 Hour	69.4	43.1	84.5
ST-4	2:10 PM	1 Hour	53.4	38.1	75.0
Tuesday, May 17, 2022					
ST-5	8:30 AM	1 Hour	69.1	55.6	82.7

**Table 15-3:  
Measured Short-Term Ambient Noise Levels (dBA) in the Plan Area**

Day/Site	Time Start	Duration	Measured Noise Level (dBA)		
			L <sub>eq</sub> <sup>(A)</sup>	L <sub>min</sub> <sup>(B)</sup>	L <sub>max</sub> <sup>(C)</sup>
ST-6	11:00 AM	1 Hour	52.6	44.8	72.1
ST-7	12:30 PM	1 Hour	63.5	38.0	79.4
ST-8	2:00 PM	1 Hour	48.5	36.5	69.6
Wednesday, May 18, 2022					
ST-9	8:50 AM	1 Hour	60.0	34.9	77.0
ST-10	10:00 AM	1 Hour	68.4	39.1	85.0
ST-11	11:50 AM	1 Hour	59.8	50.8	88.9

Source: MIG, 2022 (see the Technical Noise Appendix H)

Values are the average hourly noise level during the monitoring session.

Values are the lowest measured noise level during the monitoring session.

Values are the highest measured noise level during the monitoring session.

As shown in Table 15-2, 24-hour noise exposure levels (DNL) were lower at LT-2, near the SMART commuter corridor, than at LT-1, along Lucas Valley Road. In addition, as shown in Table 15-3, short-term daytime noise levels were generally lowest in low density areas (ST-4, ST-6, and ST-8), and highest near major roads (ST-3, ST-5, and ST-10).

#### 15.1.6.2 Existing (2019) and Future (2040) Baseline Traffic Noise Levels

Existing (Year 2019) traffic noise levels were computed using the U.S. Department of Transportation Federal Highway Administration’s (FHWA) Traffic Noise Model (TNM), Version 3.1. The model uses traffic volume, vehicle mix, vehicle speed, roadway geometry, and other variables to compute 24-hour traffic noise levels at user-defined receptor distances from the roadway center. The TNM modeling conducted for this EIR incorporates worst-case assumptions about motor vehicle traffic and noise levels; specifically, calculations are based on “hard” site conditions and do not incorporate any natural or artificial shielding.

Information on existing average daily traffic volumes was obtained from the vehicle miles travelled (VMT) analysis conducted for the Project (see Chapter 18) and Caltrans traffic count information (for SR-37, I-580, U.S. 101).<sup>5</sup> Traffic noise levels were estimated for typical daytime (7 AM to 10 PM) and nighttime (10 PM to 7 AM) hours using time-of-day distributions from the Transportation Authority of Marin Demand Model (TAMDM), which was used to conduct the VMT analysis. The mix of automobiles, medium trucks, heavy duty trucks, and motorcycles assigned to the roadway system was determined based on TAMDM and EMFAC2021 vehicle populations for Marin County. Roadway segments were modeled as straight-line segments without any flow controls. Modeled noise levels, therefore, represent free-flow traffic conditions. Vehicles were assumed to travel the posted speed limit on each modeled roadway segment.

The VMT analysis prepared for the Project also includes an analysis of future traffic conditions that would occur in Year 2040 based on continued implementation of the 2007 CWP at the land use development intensities permitted by the current 2007 CWP.<sup>6</sup> The future baseline Year

<sup>5</sup>Caltrans Traffic Census Program, Traffic Volumes, 2019 Annual Average Daily Traffic Volumes. Available at: <https://dot.ca.gov/programs/traffic-operations/census>.

<sup>6</sup>The quantitative assessment of VMT prepared for the EIR is based on the TAMDM. The existing 2019 and future 2040 baseline modeling scenarios are based on ABAG land use projections that are generally consistent with the 2007 CWP and other general planning documents in effect at the time of model development.

2040 traffic noise levels were estimated using the same methodology as described for the existing year 2019 traffic noise analysis. Traffic noise levels were computed using TNM, Version 3.1 and the same roadway geometry factors assumed for 2019 traffic noise levels; however, traffic volumes and fleet mix percentages were updated based on specific information for future Year 2040 conditions developed for the Project.

Modeled traffic noise levels for existing (Year 2019) and future (Year 2040) baseline traffic noise levels are shown in Table 15-4. Please refer to the Technical Noise Appendix H for detailed information on existing traffic noise modeling assumptions and distances to specific roadway noise contour levels.

**Table 15-4:  
Existing (2019) and Future (2040) Baseline Average Daily Traffic (ADT) Volumes and  
Associated Day/Night Average Sound Level (DNL)**

Road/Segment	Year 2019		Year 2040		Net Change	
	ADT	DNL <sup>(A)</sup>	ADT	DNL <sup>(A)</sup>	ADT	DNL
<i>Atherton Avenue</i>						
U.S. 101 to SR 37 (Sears Pt. Rd) <sup>(B)</sup>	4,797	62.9	5,321	63.5	524	0.6
<i>Butterfield Road</i>						
Northern terminus to Sir Francis Drake Blvd	1,182	52.5	1,137	52.7	-46	0.2
<i>Center Boulevard</i>						
Claus Drive to Sir Francis Drake Blvd <sup>(B)</sup>	15,074	64.8	16,170	65.0	1,096	0.2
<i>College Avenue</i>						
Sir Francis Drake Blvd to Estelle Ave	8,210	59.2	8,412	59.5	202	0.3
<i>Corte Madera Avenue</i>						
Bahr Lane to Redwood Ave <sup>(B)</sup>	11,573	60.9	11,211	60.7	-362	-0.2
<i>Las Galinas Avenue</i>						
Miller Creek Rd to Lucas Valley Rd	6,596	59.6	5,399	58.9	-1,196	-0.7
Lucas Valley Rd to Freitas Pkwy <sup>(B)</sup>	6,230	58.8	7,421	59.3	1,191	0.5
Freitas Pkwy to Northgate Dr <sup>(B)</sup>	5,502	58.1	3,831	56.3	-1,671	-1.8
<i>Lucas Valley Road</i>						
Nicasio Valley Rd to Mt McKinley Rd	1,548	54.1	4,288	58.9	2,740	4.8
Mt McKinley Rd to Mt Muir Ct	2,975	60.7	5,590	63.3	2,616	2.6
Mt. Muir Ct to Huckleberry Rd	4,045	62.9	6,546	64.8	2,501	1.9
Huckleberry Rd to U.S. 101 <sup>(B)</sup>	4,113	62.1	5,692	63.4	1,578	1.3
<i>Magnolia Avenue</i>						
Estelle Ave to Doherty Dr <sup>(B)</sup>	9,395	60.0	9,886	60.3	491	0.3
Doherty Dr to Bahr Ln <sup>(B)</sup>	8,414	60.4	10,429	61.5	2,016	1.1
<i>Miller Creek Road</i>						
Lucas Valley Rd to Las Galinas Ave	569	48.8	1,649	53.3	1,081	4.5
Las Galinas Ave to U.S. 101	7,479	59.1	6,586	58.8	-892	-0.3
<i>Nicasio Valley Road</i>						
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,097	60.9	4,716	64.8	2,619	3.9
Lucas Valley Rd to Sir Francis Drake Blvd	1,100	56.4	1,189	56.8	89	0.4
<i>North San Pedro Road</i>						
U.S. 101 to Bucks Landing	6,754	58.7	7,790	59.2	1,036	0.5
<i>Novato Boulevard</i>						
Pt. Reyes Petaluma Rd to Indian Valley	4,502	63.6	6,123	65.0	1,621	1.4
Indian Valley to San Marin Dr	5,872	63.6	7,146	64.4	1,274	0.8
San Marin Dr to Simmons Lane <sup>(B)</sup>	9,263	63.3	10,176	63.6	913	0.3
Simmons Lane to Diablo Ave <sup>(B)</sup>	9,263	65.7	10,176	66.0	913	0.3
Diablo Ave to Rowland Blvd <sup>(B)</sup>	4,251	60.3	5,595	61.3	1,344	1.0
Rowland Blvd to U.S. 101 <sup>(B)</sup>	4,251	60.3	5,595	61.3	1,344	1.0

**Table 15-4:  
Existing (2019) and Future (2040) Baseline Average Daily Traffic (ADT) Volumes and  
Associated Day/Night Average Sound Level (DNL)**

Road/Segment	Year 2019		Year 2040		Net Change	
	ADT	DNL <sup>(A)</sup>	ADT	DNL <sup>(A)</sup>	ADT	DNL
<i>Petaluma Point Reyes Road</i>						
San Antonio Rd to Novato Blvd <sup>(B)</sup>	2,172	61.7	4,868	65.0	2,696	3.3
Novato Blvd to Nicasio Valley Rd	3,224	62.4	5,833	64.9	2,609	2.5
Nicasio Valley Rd to Shoreline Hwy	3,141	61.2	4,224	63.3	1,082	2.1
<i>Red Hill Avenue</i>						
Sir Francis Drake Blvd to Ross Valley Dr <sup>(B)</sup>	26,746	68.9	27,369	69.1	623	0.2
<i>San Marin Drive</i>						
Novato Blvd to U.S. 101 <sup>(B)</sup>	5,044	61.7	4,602	61.7	-441	0.0
<i>Sir Francis Drake Boulevard</i>						
SR 1 to Platform Bridge Rd	3,328	62.8	4,043	64.2	714	1.4
Platform Bridge Rd to Lagunitas Rd	3,279	59.3	4,043	60.2	764	0.9
Lagunitas Rd to Nicasio Valley Rd	4,108	58.5	5,095	59.5	987	1.0
Nicasio Valley Rd to Olema Rd	6,543	61.3	7,270	61.8	727	0.5
Olema Rd to Red Hill Ave <sup>(B)</sup>	13,764	63.3	14,466	63.5	702	0.2
<i>Redwood Avenue</i>						
Corte Madera Ave to Tamalpais Dr <sup>(B)</sup>	10,242	60.1	10,587	60.2	345	0.1
<i>Tamalpais Drive</i>						
Redwood Ave to U.S. 101 <sup>(B)</sup>	12,446	63.8	12,611	60.2	165	-3.6
<i>Tomales Petaluma Road</i>						
SR 1 to Valley Ford Rd/Spring Hill Rd	2,345	63.2	2,882	64.0	537	0.8
<i>2nd Street</i>						
4 <sup>th</sup> St to 3rd St <sup>(B)</sup>	21,990	67.8	25,193	68.6	3,203	0.8
3rd St to Hetherton St <sup>(B)</sup>	21,990	64.5	25,193	65.3	3,203	0.8
<i>4th Street</i>						
Red Hill Ave to 2 <sup>nd</sup> St <sup>(B)</sup>	28,964	70.3	29,400	70.6	436	0.3
<i>U.S. 101</i>						
County Limit to SR 37 <sup>(C)</sup>	102,000	79.5	116,864	80.0	14,864	0.5
SR 37 to I-580 <sup>(C)</sup>	180,934	81.0	194,067	81.4	13,133	0.4
I-580 to County Limit <sup>(C)</sup>	142,500	80.3	152,475	80.7	9,975	0.4
<i>I-580</i>						
U.S. 101 to County Limit <sup>(B)</sup>	70,080	79.5	83,410	80.1	13,330	0.6
<i>SR-1</i>						
County Limit to Tomales Petaluma Rd	2,526	62.8	4,032	64.4	1,505	1.6
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,380	61.1	3,970	64.3	1,590	3.2
Pt Reyes Petaluma Rd to A St	3,913	54.9	5,465	56.9	1,551	2.0
A Street to Sir Francis Drake Blvd	3,755	57.5	5,585	60.2	1,830	2.7
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	3,575	58.8	4,439	60.6	864	1.8
Sir Francis Drake Blvd to County Limit	12,978	70.5	15,154	70.9	2,176	0.4
<i>SR-37</i>						
U.S. 101 to Atherton Ave <sup>(B)</sup>	31,900	77.6	38,579	78.0	6,679	0.4
Atherton Ave to County Limit <sup>(B)</sup>	33,800	75.3	41,306	75.8	7,506	0.5

**Table 15-4:  
Existing (2019) and Future (2040) Baseline Average Daily Traffic (ADT) Volumes and  
Associated Day/Night Average Sound Level (DNL)**

Road/Segment	Year 2019		Year 2040		Net Change	
	ADT	DNL <sup>(A)</sup>	ADT	DNL <sup>(A)</sup>	ADT	DNL
<i>SR-131</i>						
U.S. 101 to Trestle Glen Blvd <sup>(B)</sup>	34,275	73.3	35,956	73.6	1,681	0.3

Source: MIG, 2022 (see the Technical Noise Appendix H).

- A. The day/night average sound level (DNL) is predicted at 50 feet from the road centerline (excepting U.S. 101). *Italicized* text indicates the predicted DNL value is above the County's normally acceptable land use value (see Table 15-10) for the predominant land use present along the modeled roadway segment. This is only identified for road segments that are under the County's jurisdiction.
- B. This road segment is either partially or wholly outside the County's jurisdiction (i.e., is within a city).
- C. Modeled traffic noise levels for U.S. 101 are predicted 100 feet from the highway centerline.

The results of the traffic noise modeling indicate that existing traffic noise levels within the unincorporated County area are highest along major arterials and other roads with high travel speeds (e.g., Atherton Avenue, Lucas Valley Road, Nicasio Valley Road, Novato Boulevard, Petaluma Point Reyes Road, and Sir Francis Drake Boulevard) and highways. Specifically, the modeling shows:

- **Atherton Avenue:** Modeled Year 2019 traffic noise levels are 62.9 DNL at 50 feet from the center of the roadway. Agricultural lands are the predominant land use along this segment of Atherton Avenue. The modeled Year 2019 traffic noise levels on Atherton Avenue are below the County's acceptable noise exposure level for agricultural land uses (75 DNL, see Table 15-10). Modeled Year 2040 traffic noise levels are estimated to increase by less than 1 dBA and remain within the County's acceptable noise exposure level for agricultural land uses.
- **Lucas Valley Road:** Modeled Year 2019 traffic noise levels between Mount McKinley Road and Huckleberry Road range from 60.7 DNL to 62.9 DNL at 50 feet from the center of the roadway. Single-family residential lands are the predominant land use on the north side of this segment of Lucas Valley Road. The modeled Year 2019 traffic noise levels exceed the County's acceptable noise exposure level for single-family land uses (60 DNL, see Table 15-10), but are within the County's conditionally acceptable noise exposure level for single-family residential land uses (70 DNL). Modeled Year 2040 traffic noise levels are estimated to increase by approximately 2 dBA to 3 dBA and remain within the County's conditionally acceptable noise exposure level for single family residential land uses.
- **Nicasio Valley Road:** Modeled Year 2019 traffic noise levels between Point Reyes Petaluma Road and Lucas Valley Road are 60.9 DNL at 50 feet from the center of the roadway. Agricultural lands are the predominant land use along this segment of Nicasio Valley Road. The modeled Year 2019 traffic noise levels on Nicasio Valley Road are below the County's acceptable noise exposure level for agricultural land uses (75 DNL, see Table 15-10). Modeled Year 2040 traffic noise levels are estimated to increase by approximately 4 dBA but remain within the County's acceptable noise exposure level for agricultural land uses.
- **Novato Boulevard:** Modeled Year 2019 traffic noise levels between Point Reyes Petaluma Road and San Marin Drive are 63.6 DNL at 50 feet from the center of the roadway. Agricultural lands are the predominant land use along this segment of Novato

Boulevard. The modeled Year 2019 traffic noise levels on Novato Boulevard are below the County's acceptable noise exposure level for agricultural land uses (75 DNL, see Table 15-10). Modeled Year 2040 traffic noise levels are estimated to increase by approximately 1 dBA and remain within the County's acceptable noise exposure level for agricultural land uses.

- **Petaluma Point Reyes Road:** Modeled Year 2019 traffic noise levels between Novato Boulevard and Shoreline Highway range from 61.2 DNL to 62.4 DNL at 50 feet from the center of the roadway. Agricultural lands are the predominant land use along this segment of Petaluma Point Reyes Road. The modeled Year 2019 traffic noise levels on Petaluma Point Reyes Road are below the County's acceptable noise exposure level for agricultural land uses (75 DNL, see Table 15-10). Modeled Year 2040 traffic noise levels are estimated to increase by approximately 2 dBA and remain within the County's acceptable noise exposure level for agricultural land uses.
- **Sir Francis Drake Boulevard:** Modeled Year 2019 traffic noise levels between SR 1 and Platform Bridge Road and between Nicasio Valley Road and Olema Road range from 61.3 DNL to 62.8 DNL at 50 feet from the center of the roadway. Open space and agricultural lands are the predominant land uses along these segments of Sir Francis Drake Boulevard. The modeled Year 2019 traffic noise levels on Sir Francis Drake Boulevard are below the County's acceptable noise exposure level for parks and agricultural land uses (75 DNL, see Table 15-10). Modeled Year 2040 traffic noise levels are estimated to increase by approximately 1 dBA and remain within the County's acceptable noise exposure level for agricultural land uses.

As shown in Table 15-4, modeled traffic noise levels on road segments within the unincorporated area are generally lower than modeled traffic noise levels on road segments that are within City boundaries. This is primarily due to lower traffic volumes on County road segments (as compared to traffic volumes on City road segments).

#### **15.1.6.3 Existing (2019) and Future (2040) Baseline Railroad Noise Levels**

SMART provides diesel commuter and freight rail services in Marin County. Commuter service is currently (as of August 2022) provided between Larkspur (in southern Marin County) and the Sonoma County Airport (in Sonoma County). SMART's commuter rail system generally parallels the U.S. 101 corridor. The existing County land uses along the rail corridor consist of commercial, light industrial, and residential and light industrial buildings that are generally setback approximately 40 to 150 feet or more from the center of the railroad track. Freight service operates on the commuter line, as well as a second line (the Brazos Branch line) that runs between Novato (in eastern Marin County) and Schellville to the east (in Sonoma County). The existing County land uses along this dedicated freight rail line corridor consist of a mix of agricultural, recreational, and commercial uses. SMART's commuter service consists of 36 total daily weekday trains and 12 total daily weekend trains. Weekday trains generally run from approximately 4:40 AM to 9:20 PM, while weekend trains generally run from approximately 7:35 AM to 8:50 PM. SMART's freight rail service is limited to approximately two trains per week. There are many at-grade railroad crossings in the unincorporated areas of the County.

Railroad noise is generated from a variety of sources. The locomotive engine's propulsion system generates noise from mechanical and electrical systems as well as exhaust pipes. The interaction of wheels with the track produces various noises, particularly where the wheel encounters a flaw or defect along smooth wheel / track surfaces. Finally, train horns and railroad



crossing warning devices generate short (no more than 20 seconds) but loud (up to 110 dBs for train horns) alerts pursuant to federal safety regulations. Local governments may establish “quiet zones” to eliminate or reduce train horn soundings, which is the case in Marin County.

Existing railroad noise levels were computed using the Federal Railroad Administration’s CREATE model, which is based on noise calculation methods contained in the FTA’s Transit Noise and Vibration Impact Assessment document but includes adjustments to account for the greater locomotive horsepower typically associated with freight trains, as well as differences in freight train schedules, weight, and total length.<sup>7</sup> The model uses train operating characteristics (locomotive type, speed, trains per daytime and nighttime), track characteristics (e.g., jointed or welded track, elevated or at grade track), and crossing information to compute hourly and 24-hour traffic noise levels at user-defined receptor distances from the center of the railroad track. No natural or human-made noise shielding or barriers (e.g., topography, vegetation, berms, walls, or buildings or other attenuation measures) were accounted for. Therefore, modeled noise levels are considered “worst case” railroad noise conditions along the length of each corridor. Commuter and freight trains were assumed to travel 79 and 40 miles per hour, respectively, along the rail corridor. The distances to the DNL contours for existing rail operations are shown in Table 15-5. Refer to the Technical Noise Appendix H for detailed information on rail noise modeling assumptions.

**Table 15-5:  
Existing (2022) Railroad Day/Night Average Sound Levels (DNL)**

Railroad/Service	Trains Per Day <sup>(A)</sup>	DNL at 50 feet (dBA) <sup>(B)</sup>	DNL Contour and Distance from Railroad Center (in Feet)			
			75 dBA	70 dBA	65 dBA	60 dBA
<b>SMART Commuter Corridor</b>						
MART Commuter Rail	36	60	2	5	16	50
MART Freight Service	1	64	4	13	40	126
Combined Rail Activity	37	66	6	20	63	199
<b>SMART Brazos Branch Line</b>						
MART Freight Service	1	64	4	13	40	126

Source: MIG, 2022 (see the Technical Noise Appendix H).

(A) The number of trains per day is based on typical weekday commuter service. Weekend commuter service is approximately one-third of weekday service. Freight rail service may only occur one to two days per week.

(B) The day/night average sound level (DNL) value at listed distance is as measured from the center of the modeled rail track.

The results of the rail noise modeling indicate that existing rail noise levels along SMART’s commuter corridor and Brazos branch line are estimated to be above 60 DNL at a distance of 199 feet and 126 feet from the center of the railroad track, respectively.

The 2018 California State Rail Plan acknowledges that freight train service will increase over time.<sup>8</sup> Furthermore, SMART has initiated planning processes to expand freight rail service. Although the expansion of freight rail service is subject to logistical and economic factors that may change over time, SMART’s best case freight forecast identifies a 150% increase in freight-related revenue.<sup>9</sup>

<sup>7</sup>U.S. Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual.

<sup>8</sup>Caltrans, 2018. California State Rail Plan, pp. 21 to 27. Available at: <https://dot.ca.gov/programs/rail-and-mass-transportation/california-state-rail-plan>.

<sup>9</sup>SMART, 2021. Analysis of SMART’s Freight Market, p. 27. Available at: <https://www.sonomamarintrain.org/sites/default/files/Documents/Final%20Report%20Freight%20Market%20Analysis%20120921.pdf>.

The 2018 California State Rail Plan also plans to substantially increase commuter rail ridership in the state.<sup>10</sup> SMART does not have published forecasts for future ridership targets but has initiated planning processes to expand service on its commuter corridor from Sonoma County Airport to Petaluma and develop a new commuter service from Novato (in Marin County) to Suisun City (in Solano County) that would link SMART service with Amtrak’s Capital Corridor service.<sup>11</sup>

Potential future rail noise levels were estimated using the same methodology used to calculate existing rail noise levels, except that commuter rail activity was doubled to account for potential increase in ridership and trains by and freight rail activity was increased by 150% to align with SMART’s best case freight rail growth forecasts. Year 2040 rail activity noise levels are estimated to increase by approximately 3 dBA. The distances to the DNL contours for existing rail operations are shown in Table 15-6. Please refer to the Technical Noise Appendix H for detailed information on rail noise modeling assumptions.

**Table 15-6:  
Potential Future 2040 Railroad Day/Night Average Sound Levels (DNL)**

Railroad/Service	Trains Per Day <sup>(A)</sup>	DNL at 50 feet (dBA) <sup>(B)</sup>	DNL Contour and Distance from Railroad Center (in Feet)			
			75 dBA	70 dBA	65 dBA	60 dBA
<b>SMART Commuter Corridor</b>						
SMART Commuter Rail	72	63	3	10	32	100
SMART Freight Service	2	68	10	32	100	315
Combined Rail Activity	74	69	13	40	126	397
<b>SMART Brazos Branch Line</b>						
MART Freight Service	2	68	10	32	100	315

Source: MIG, 2022 (See the Technical Noise Appendix H).  
 (A) The number of trains per day is based on typical weekday commuter service. Weekend commuter service is approximately one-third of weekday service. Freight rail service may only occur two to four days per week  
 (B) The day/night average sound level (DNL) value at listed distance is as measured from the center of the modeled rail track.

**15.1.6.4 Airport-Related Noise Levels**

The following airport and aircraft-related facilities are located within Marin County:

- Marin County Airport, also known as Gross Field, is a public general aviation airport located north of Novato. The airport is operated by the County and includes a helipad. There are approximately 150 aircraft based at the facility, and the airport averages 234 flights (take off and landings) a day.<sup>12</sup> The projected future noise contours for Gross Field Airport are shown on Map 3-14 of the 2007 CWP; however, this map does not include a planned 300-foot extension of the airport’s runway. The projected future noise contours with this planned extension are shown on Exhibit 5.1-4 of the Supplement to

<sup>10</sup>Caltrans, 2018. California State Rail Plan, p. 14. Available at: <https://dot.ca.gov/programs/rail-and-mass-transportation/california-state-rail-plan>.

<sup>11</sup>SMART, 2019. Passenger Rail Service Novato to Suisun City. Available at: <https://sonomamarintrain.org/sites/default/files/Board/COC%20Documents/SMART%20-%20Passenger%20Rail%20Service%20Novato%20to%20Suisun%20City%20-%20Report.pdf>.

<sup>12</sup>AirNav, “KDVO Gross Field Airport, Novato, California FAA Information Effective 11 August 2022,” 2022. Available at: <https://www.airnav.com/airport/KDVO>.

the Final Environmental Impact Statement for the Gness Field Airport Runway 13/31 Extension Project.<sup>13</sup>

- San Rafael Airport is a private use airport located in the City of San Rafael. There are 100 aircraft based at the facility (pursuant to a City conditional use permit), and the airport averages approximately 25 flights a day.<sup>14</sup> The 2003 noise contours for San Rafael Airport are shown on Map 3-16 of the 2007 CWP.
- Commodore Center Heliport is a private heliport landing facility in Sausalito that also supports seaplane rides. There are three aircraft (helicopters) based at the facility, and the facility averages approximately 57 flights a week.<sup>15</sup> The noise contours for San Rafael Airport are shown on Map 3-15 of the 2007 CWP; however, the San Rafael General Plan 2040 includes a different noise contour map for this facility.<sup>16</sup>
- San Rafael heliport is a private heliport landing facility located in San Rafael. There are two aircraft based at this facility.<sup>17</sup>

In addition to the above facilities, the 2007 CWP states that flights passing over the County into and out of Oakland International Airport and San Francisco International Airport generate noise levels in the range of 45 to 70 dBA for single-event flights over the County, but that on an annual average basis, aircraft overflights are less than 60 DNL.<sup>18</sup>

#### 15.1.6.5 Other Non-Transportation Noise Sources

Non-transportation sources also contribute to the County's existing noise environment. According to the 2007 CWP, there are no industrial plants within the unincorporated area of the County that are known or projected to generate noise above 60 DNL beyond the property line.<sup>19</sup> The San Rafael Rock Quarry and McNear Brickworks are industrial facilities located in the County (near 1000 San Pedro Road); noise from these facilities include stationary machinery, on-site trucks, off-site trucks, and periodic blasting.<sup>20</sup>

Commercial land uses located throughout the County (but primarily along key roadways like Sir Francis Drake Boulevard, schools and outdoor park and recreation facilities, and residential land uses generate noise from daily operations of landscaping equipment, stationary sources such as heating, ventilation, and air conditioning (HVAC) equipment, business deliveries, solid waste

<sup>13</sup>U.S. Department of Transportation, Federal Aviation Administration, 2020. Available at: [http://gnossfieldeis-eir.com/reports\\_documents/final\\_supplement\\_volume1.htm](http://gnossfieldeis-eir.com/reports_documents/final_supplement_volume1.htm).

<sup>14</sup>AirNav, "CA35 San Rafael Airport, San Rafael, California FAA Information Effective 11 August 2022," 2022. Available at: <https://www.airnav.com/airport/ca35>.

<sup>15</sup>AirNav, "KJMC Commodore Center Heliport, Sausalito, California FAA Information Effective 11 August 2022," 2022. Available at: <https://www.airnav.com/airport/KJMC>.

<sup>16</sup>City of San Rafael, 2021. San Rafael General Plan 2040, Appendix I, Figure I-11. Available at: <https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2021/09/AppendixI-NoiseContours.pdf>.

<sup>17</sup>AirNav, "San Rafael Private Heliport, San Rafael, California FAA Information Effective 11 August 2022," 2022. Available at: <https://www.airnav.com/airport/5CA3>.

<sup>18</sup>2007 Marin Countywide Plan, November 6, 2007, p. 3.10-5.

<sup>19</sup>2007 Marin Countywide Plan, November 6, 2007, p. 3.10-5.

<sup>20</sup>City of San Rafael, 2021. San Rafael General Plan 2040, Appendix I, p. I-7. Available at: <https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2021/09/AppendixI-NoiseContours.pdf>.

pickup services, etc. Such sources are considered local source of noise that only influence the immediate surroundings.

### 15.1.7 Noise Sensitive Receptors

Noise-sensitive receptors are buildings or areas where unwanted sound or increases in sound may have an adverse effect on people or land uses. It is noted the 2007 CWP Glossary defines a sensitive receptor as “a facility in which a number of individuals are highly susceptible to the adverse effects of air pollution or noise.”<sup>21</sup> Existing residential areas, motels and hotels, hospitals and health care facilities, school facilities, and parks are examples of noise receptors that could be sensitive to changes in existing environmental noise levels. In addition to existing sensitive noise receptors, the proposed Project could increase development density in the County and lead to new residential and mixed use residential and commercial projects that would contain noise sensitive receptors.

## 15.2 REGULATORY FRAMEWORK

### 15.2.1 Federal Regulations

#### 15.2.1.1 Federal Transit Administration (FTA)

No federal regulations apply to noise or vibration from the proposed Project, but the FTA’s 2018 Transit Noise and Vibration Impact Assessment Manual document sets groundborne vibration annoyance criteria for general assessments. The criteria vary by the type of building being subjected to the vibrations, and the overall number of vibration events occurring each day. Category 1 buildings are considered buildings where vibration would interfere with operation, even at levels that are below human detection. These include buildings with sensitive equipment, such as research facilities and recording studios. Category 2 buildings include residential lands and buildings where people sleep, such as hotels and hospitals. Category 3 buildings consist of institutional land uses with primarily daytime uses. The FTA standards vary for “frequent” events (occurring more than 70 times per day, such as a rapid transit project), “occasional” events (occurring between 30 to 70 times per day), and “infrequent” events (occurring less than 30 times per day). The FTA’s vibration annoyance (criteria are summarized in Table 15-7.

**Table 15-7:  
FTA Ground-Borne Vibration Impact Criteria for General Assessment**

<b>Vibration Land Use Category/Type</b>	<b>Frequent Events</b>	<b>Occasional Events</b>	<b>Infrequent Events</b>
Category 1 – Buildings with sensitive equipment	65 VdB	65 VdB	65 VdB
Category 2 – Buildings where people normally sleep	72 VdB	75 VdB	80 VdB
Category 3 – Institutional land uses with primarily daytime use	75 VdB	78 VdB	83 VdB

Source: FTA, 2018.<sup>22</sup>

Note: VdB = Velocity decibel

<sup>21</sup>2007 Marin Countywide Plan, November 6, 2007, p. 5-51.

<sup>22</sup>U.S. Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, p. 126.

## 15.2.2 State Regulations

### 15.2.2.1 California Building Standards Code

The California Building Standards Code is contained in Title 24 of the California Code of Regulations and consists of 11 different parts that sets forth various construction and building requirements. Part 2, California Building Code, Section 1206, Sound Transmission, establishes sound transmission standards for interior walls, partitions, and floor/ceiling assemblies. Specifically, Section 1206.4 establishes that interior noise levels attributable to exterior noise sources shall not exceed 45 dBA DNL or CNEL (as set by the local General Plan) in any habitable room.

### 15.2.2.2 California Green Building Standards Code

The California Green Building Standards Code is Part 11 to the California Building Standards Code. Chapter 5, Nonresidential Mandatory Standards, Section 5.507 establishes the following requirements for nonresidential development that may be applicable to the Project.

- Section 5.507.4.1.1 sets forth that buildings exposed to a noise level of 65 dBA  $L_{eq}$  (1-hour) during any hour of operation shall have exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composting sound transmission class (STC) rating of at least 45 (or an outdoor indoor transmission class [OITC] of 35), with exterior windows of a minimum STC of 40.
- Section 5.507.4.2 sets forth that wall and roof assemblies for buildings exposed to a 65 dBA  $L_{eq}$  pursuant to Section 5.507.4.1.1 shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed 50 dBA  $L_{eq}$  in occupied areas during any hour of operation. This requirement shall be documented by an acoustical analysis documenting interior sound levels prepared by personnel approved by the architect or engineer of record.

### 15.2.2.3 Caltrans

Caltrans' Transportation and Construction Vibration Guidance Manual provides a summary of vibration human responses and structural damage criteria that have been reported by researchers, organizations, and governmental agencies. Caltrans' synthesis of this information indicates that the thresholds for continuous vibration sources is about half of the threshold for transient sources. Caltrans' guidelines for vibration damage and vibration annoyance are summarized in Table 15-8 and Table 15-9.

**Table 15-8:  
Caltrans' Vibration Threshold Criteria for Building Damage**

Structural Integrity	Maximum PPV (in/sec)	
	Transient	Continuous
Historic and some older buildings	0.50	0.25
Older residential structures	0.50	0.30
New residential structures	1.00	0.50
Modern industrial and commercial structures	2.00	0.50

Source: Caltrans, 2020.<sup>23</sup>

<sup>23</sup>Caltrans, 2020. Transportation and Construction Vibration Guidance Manual, p. 38.

**Table 15-9:  
Caltrans' Vibration Threshold Criteria for Human Response**

Human Response	Maximum PPV (in/sec)	
	Transient	Continuous
Slightly perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.90	0.10
Severe	2.0	0.4

Source: Caltrans, 2020.<sup>24</sup>

### 15.2.3 Local Regulations

#### 15.2.3.1 Marin County Airport Land Use Commission

The Marin County Airport Land Use Commission (ALUC) reviews proposed land use plans and development projects in the vicinity of Gness Field to ensure that land use changes and development projects are compatible with the Gness Field Airport Land Use Plan (ALUP).<sup>25</sup> The ALUP for Gness Field is discussed below. Currently, there is no ALUP prepared for the San Rafael Airport and Richardson Bay Heliport facilities.

The Gness Field ALUP was adopted by the Marin County ALUC in June 1991 and is based on the County's 1989 Master Plan for Gness Field. The ALUP sets policies for the review of land use plans and proposed development in the vicinity of Gness Field. The ALUP also identifies airport noise contours and compatibility zones, as well as different airport-related safety zones. For noise contours, the ALUP states that an acoustical investigation and noise insulation should be required within the 55 dB contour. It also provides the following guidelines for residential land use within the 55-60 CNEL contour:

- Potential for annoyance exists; identify high complaint areas
- Determine whether sound insulation requirements should be established for these areas
- Noise easements should be required for new construction
- Limit residential use underneath the flight pattern

The ALUP identifies that single- and multi-family residential development is not considered compatible within areas exposed to airport noise levels of 60 dB CNEL and higher. In addition, the ALUP contains the following Noise/Land Use Compatibility Policies:

- Policy NC-1.1: Land Use Compatibility. The ALUC shall adopt the guidelines contained in Tables 3.3 and 4.1 for considering various types of land uses and zoning changes in the environs of Gness Field.

<sup>24</sup>Caltrans, 2020. *Transportation and Construction Vibration Guidance Manual*, p. 38.

<sup>25</sup>Marin County, 1991. *Airport Land Use Plan Marin County Airport Gness Field*. Available at: <https://www.marincounty.org/-/media/files/departments/cd/planning/currentplanning/publications/landuseplan/airport-land-use-plan--marin-county-airport-gness-field.pdf>.

- Policy NC-1.2: CNEL Contours. The Airport Land Use Commission shall adopt the CNEL noise contours illustrated on Figure 3.2, entitled "Flight Tracks/Noise Contours" for Gross Field as the criteria for noise/land use compatibility decisions.
- Policy NC-1.3: CNEL Contour Updates. The noise contours may be updated and/ or revised as warranted based on changes in aircraft technology, flight operational patterns, noise characteristics, and methodology for calculating CNELs.
- Policy NC-1.4: Residential Land Use. New residential development should be prohibited within the 60 dB CNEL noise contour.
- Policy NC-1.5: Policy NC-1.5 Noise Easements. As a condition of approval, noise easements should be granted to the County or any zoning change or new residential development within the 55 dB or higher CNEL noise contour.
- Policy NC-1.6: Acoustical Study. As a condition of approval, an acoustical study shall be required for any proposed new residential development - within the 55 dB CNEL noise contour. Recommendations in the study regarding sound insulation shall be implemented.
- Policy NC-1.7: Noise/Land Use Compatibility. The County -General Services Department should work with the Aviation Commission to set up a reporting system for noise and safety complaints. A log of these complaints should be maintained and quarterly reports issued at meetings of the Aviation Commission.

### 15.2.3.2 2007 Marin Countywide Plan

The 2007 CWP addresses the major sources of noise in the County. Adopted CWP goals, policies, and implementation programs applicable to construction and operational noise include:

#### **Built Environment Element – Noise policies**

- GOAL NO-1: Protection from Excessive Noise. Ensure that new land uses, transportation activities, and construction do not create noise levels that impair human health or quality of life
- Policy NO-1.1: Limit Noise from New Development. Direct the siting, design, and insulation of new development to ensure that acceptable noise levels are not exceeded.
- Policy NO-1.2: Minimize Transportation Noise. Ensure that transportation activities do not generate noise beyond acceptable levels, including in open space, wilderness, wildlife habitat, and wetland areas.
- Policy NO-1.3: Regulate Noise Generating Activities. Require measures to minimize noise exposure to neighboring properties, open space, and wildlife habitat from construction-related activities, yard maintenance equipment, and other noise sources, such as amplified music.
- Policy NO-1.4: Limit Sound Walls Along Highway 101. Promote best available noise reduction technologies and alternatives to sound walls to mitigate noise along Highway 101.

- Implementation Program NO-1.a: Enforce Allowable Noise Levels. Through CEQA and County discretionary review, require new development to comply with allowable noise levels.
- Implementation Program NO-1.b: Comply with Acceptable Noise Levels. Require discretionary permits for residential and other noise-sensitive land uses proposed near noise sources that may exceed acceptable noise levels and/or benchmarks to provide acoustical analyses; and, if necessary, commit to measures to comply with the applicable standards set out in Program NO-1.a. Amend the Development Code to include these requirements.
- Implementation Program NO-1.c: Require Project-Specific Noise Mitigation. Require all development to mitigate its noise impacts where the project would: raise the Ldn by more than 5 dBA; raise the Ldn by more than 3 dBA and exceed the Normally Acceptable standard; or raise the Ldn by more than 3 dBA and the Normally Acceptable standard is already exceeded.
- Implementation Program NO-1.d: Set Additional Limits for Housing. Amend the Development Code to require the following maximum noise levels for all new residential units: Exterior — 60 dBA Ldn, Interior — 45 dBA Ldn
- Implementation Program NO-1.e: Coordinate with Public Agencies. Work with local, regional, State, and federal agencies to address existing and potential noise impacts, such as vehicle tire sound production and aircraft overflight, and to determine appropriate mitigation measures necessary to meet Acceptable Noise Levels.
- Implementation Program NO-1.f: Review Projects Near Gness Field. Review development proposals within the two-mile referral area of Gness Field for consistency with the noise criteria set forth in the Countywide Plan and the adopted Airport Land Use Plan.
- Implementation Program NO-1.g: Plan for New Helipad. Require any proposed helipad to provide site-specific environmental review, including detailed noise and safety impact analyses and mitigation, prior to consideration.
- Implementation Program NO-1.h: Anticipate Additional Rail Noise. Once the Sonoma-Marín Area Rail Transit District (SMART) selects a vehicle and evaluates the environmental impacts of proposed regional rail service, including noise impacts, update the Noise Section of the Countywide Plan to include a map showing noise contours along the railroad tracks, and work with SMART to determine appropriate mitigation measures necessary to meet acceptable noise levels.
- Implementation Program NO-1.i: Regulate Noise Sources. Sections 6.70.030(5) and 6.70.040 of the Marin County Code establish allowable hours of operation for construction-related activities. As a condition of permit approval for projects generating significant construction noise impacts during the construction phase, construction management for any project shall develop a construction noise reduction plan and designate a disturbance coordinator at the construction site to implement the provisions of the plan.



- Implementation Program NO-1.j: Consider Regulating Outdoor Amplified Music and Equipment. Evaluate the feasibility of adopting an ordinance regulating the type and time of use of outdoor amplified music and/or motorized outdoor equipment such as leaf blowers, generators, lawn mowers, trimmers, chain saws, and other gas-powered tools (special consideration shall be given to homeowners who perform their own work).
- Implementation Program NO-1.k: Minimize Noise Impacts from Temporary Land Uses. Amend the Development Code to include standards for temporary land uses, such as fairs or exhibits, that require mitigation of noise impacts on surrounding areas in conformance with State and County noise level guidelines for nearby land uses.
- Implementation Program NO-1.l: Enforce Personal Watercraft Ban. Continue to enforce the ban on personal watercraft in areas where such vessels have been prohibited.
- Implementation Program NO-1.m: Limit Sound Walls. Encourage Caltrans to consider utilizing alternatives to sound walls along Highway 101, such as landscaped berms, sloped walls, and other best technology. Amend the Development Code to include standards for construction of non-sound-wall noise mitigation structures. Consider the impacts of reflected noise resulting from sound wall installation.

As discussed in the policies above, the 2007 CWP establishes land use compatibility standards and stationary source standards. Specifically, with regard to Implementation Program NO-1.a (Enforce Allowable Noise Levels), the CWP sets forth that CWP Figure 3-41 shall be used as guide for: 1) Determining the appropriate type of new development in relation to the existing transportation noise environment; 2) Determining the increase in transportation noise on existing development that results from proposed development; and 3) The allowable noise levels for commercial, industrial, agricultural, or other less-noise sensitive land uses exposed to stationary source noise generated by new development. The standards contained in 2007 CWP Figure 3-41 are reproduced as Table 15-10 below for ease of reference. Furthermore, the 2007 CWP sets forth that 2007 CWP Figure 3-43 shall be used as a guide for: 1) Establishing the allowable stationary noise levels that new residential projects and other noise-sensitive land uses can be exposed to; and 2) Establishing the allowable noise level that new stationary noise sources can expose existing residential or other noise sensitive land uses to. The stationary noise standards contained in Countywide Figure 3-43 are reproduced as Table 15-11 below for ease of reference. The 2007 CWP states that its transportation and stationary source noise standards are intended for the purposes of planning and siting land uses, and that the standards are not a noise ordinance and are not to be used to achieve the same objectives as a noise ordinance. The standards are not to be used for regulating existing noise sources or enforcement concerning noise problems.<sup>26</sup>

**Table 15-10:  
Noise/Land Use Compatibility Guidelines**

Land Use Category	Community Noise Exposure (DNL or CNEL, dB)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential- Low Density Single Family, Duplex, Mobile Homes	50-60	55-70	70-75	75+
Residential- Multi Family	50-65	60-70	70-75	75+
Transient Lodging- Motels, Hotels	50-65	60-70	70-80	80+

<sup>26</sup>2007 Marin Countywide Plan, November 6, 2007, pp. 3.10-11 to 3.10-12.

**Table 15-10:  
Noise/Land Use Compatibility Guidelines**

Land Use Category	Community Noise Exposure (DNL or CNEL, dB)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-70	60-70	70-80	80+
Auditoriums, Concert Halls, Amphitheaters	-	50-70	-	70+
Sports Arena, Outdoor Spectator Sports	-	50-75	-	75+
Playgrounds, Neighborhood Parks	50-70	67.5-75	-	75+
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-75	-	70-80	80+
Office Buildings, Business Commercial and Professional	50-70	67.5-77.5	77.5+	-
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	80+	-

Source: 2007 CWP Figure 3-41<sup>27</sup>

**Table 15-11:  
Allowable Noise Exposure From Stationary Noise Sources**

Noise Metric	Daytime (7 A.M. to 10 P.M.)	Nighttime (10 P.M. to 7 A.M.)
Hourly Leq, dB <sup>(A)</sup>	50 <sup>(B)</sup>	45 <sup>(B)</sup>
Maximum Level, dB	70 <sup>(B)</sup>	65 <sup>(B)</sup>
Maximum Level, dB (Impulsive Noise) <sup>(A)</sup>	65 <sup>(B)</sup>	60 <sup>(B)</sup>

Source: 2007 CWP Figure 3-43<sup>28</sup>

- A. Leq (“Equivalent Sound Pressure Level”) is the constant sound energy that would produce the same noise level as actual sources that are fluctuating during the specified time period (one hour).
- B. Guidelines for use:
1. The measurements are made at the property line of the receiving land use. The effectiveness of noise mitigation measures should be determined by applying the standards on the receptor side of noise barriers or other property line noise mitigation measures.
  2. The nighttime standards apply only when the receiving land use operates or is occupied during nighttime hours.
  3. Sound-level measurements to determine maximum level noise shall be made with “slow” meter response.
  4. Sound-level measurements for impulsive noise sources shall be made with “fast” meter response. Impulsive noises are defined as those that have sharp, loud peaks in decibel levels but that quickly disappear. Examples include a dog’s bark, a hammer’s bang, and noise with speech or music content.
  5. The allowable noise level standard shall be raised to the ambient noise level in areas where the ambient level already exceeds the standards shown in this table. For example, if the neighborhood already experiences daytime hourly noise levels of 60 dBA as an ambient condition, the noise level standard shall be raised to 60 dBA.
  6. The allowable noise level shall be reduced 5 dB if the ambient hourly Leq is at least 10 dB lower than the noise-level standard shown in this table. For example, if the neighborhood experiences daytime hourly noise levels of 40 dBA as an ambient condition, the noise level standard shall be lowered to 45 dBA.

### 15.2.3.3 Marin County Code

Marin County Code Chapter 6.70 (Loud and Unnecessary Noises) contains County noise restrictions. Section 6.70.020 (Prohibition) establishes that, “It is unlawful for any person to make, continue, or cause to be made or continued, any loud, unnecessary or unusual noise

<sup>27</sup>2007 Marin Countywide Plan, November 6, 2007, p. 3.10-3.

<sup>28</sup>2007 Marin Countywide Plan, November 6, 2007, p. 3.10-12.

which either annoys, disturbs, injures or endangers the comfort, repose, health or peace of others.”

Section 6.70.030 (Enumerated noises) identifies specific loud, annoying, and unnecessary noises that are declared to be in violation of Chapter 6.70. These noises are summarized in Table 15-12.

Chapter 19 (Marin County Building Code), Section 19.04.053 (Unfinished-construction nuisance prohibition) prohibits nuisances from unfinished construction, including construction noise.

**Table 15-12:  
Marin County Municipal Code Noise Prohibitions**

<b>Noise Source</b>	<b>Noise Source Description</b>	<b>Standard Applied</b>
Horns, signaling devices, etc.	The sounding of any horn or signaling device on any automobile, motorcycle or other vehicle on any road or public place, except as a danger warning	The creation of any unreasonably loud or harsh sound by a signally device and the sounding of any such device for an unnecessary and unreasonable period of time is prohibited.
Radios, phonographs, jukeboxes, etc.	Using, operating, or permitting to be played, used or operated any radio receiving set, musical instrument, phonograph, juke box, or other machine or device for the producing or reproducing of sound in such manner as to disturb the peace, quiet and comfort of the neighboring inhabitants or at any time with louder volume than is necessary for convenient hearing for the person or persons who are in the room, vehicle or chamber in which such machine or device is operated and who are voluntary listeners thereto.	The operation of any such set, instrument, phonograph, machine or device between the hours of eleven p.m. and seven a.m. in such a manner as to be plainly audible at a distance of fifty yards from the building, structure or vehicle in which it is located shall be prima facie evidence of a violation of this section.
Loudspeakers, amplifiers, etc.	Using, operating or permitting to be played, used, or operated of any musical instrument, loudspeaker, sound amplifier, or other machine or device, or combination thereof, for the producing or reproducing of sound in such manner as to disturb the peace, quiet and comfort of the neighboring inhabitants or at any time with louder volume than is necessary for convenient hearing for the person or persons who are in the room, vehicle or location in which such machine or device is operated and who are voluntary listeners thereto.	The operation of any such instrument, loudspeaker, sound amplifier, or other machine or device, or combination thereof, between the hours of eleven p.m. and seven a.m. in such a manner as to be plainly audible at a distance of fifty yards from the building, structure or vehicle in which it is located shall be prima facie evidence of a violation of this section.
Yelling, shouting, etc.	Yelling, shouting, hooting, whistling, or singing.	Yelling, shouting, hooting, whistling, or singing on public roads between the hours of eleven p.m. and seven a.m. so as to annoy or disturb the quiet, comfort, or repose of persons in any dwelling, hotel or other type of residence in the vicinity.
Construction Activities and Related Noise	Construction activities and other work undertaken in connection with building, plumbing, electrical, and other permits issued by the community development agency.	Hours for construction activities shall be limited to Monday through Friday between the hours of 7:00 a.m. and 6:00 p.m. and Saturdays from 9:00 a.m. to 5:00 p.m.

**Table 15-12:  
Marin County Municipal Code Noise Prohibitions**

Noise Source	Noise Source Description	Standard Applied
		<p>Construction activities are prohibited on Sundays and holidays.</p> <p>Loud noise-generating construction-related equipment (e.g., backhoes, generators, jackhammers) can maintained, operated, or serviced at a construction site for permits administered by the community development agency from eight a.m. to five p.m. Monday through Friday only.</p> <p>Special exceptions to these limitations may occur for:</p> <ul style="list-style-type: none"> <li>▪ Emergency work as defined in Section 22.130.030 of this code provided written notice is given to the community development director within forty-eight hours of commencing work;</li> <li>▪ Construction projects of city, county, state, other public agency, or other public utility;</li> <li>▪ When written permission of the community development director has been obtained, for showing of sufficient cause;</li> <li>▪ Minor jobs (e.g., painting, hand sanding, sweeping) with minimal/no noise impacts on surrounding properties;</li> <li>▪ Modifications required by the review authority as a discretionary permit condition of approval.</li> </ul>

Source: Marin County Municipal Code Section 6.70.030

### 15.3 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to noise and vibration that could result from the Project and discusses Project policies and actions that would avoid or reduce those potential impacts.

In general, these noise and vibration impacts can be divided into short-term, construction-related impacts and long-term, operations-related impacts. Construction-related impacts would be associated with construction activities that would occur as part of future development facilitated by the Project. Operations-related impacted would be associated with major noise and vibration sources (e.g., traffic, trains, other transit, aircraft, and stationary sources) and changes in noise and vibration levels that may occur as a result of the Project.

### 15.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to noise and vibration if it would:

- A. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- B. Generate excessive ground-borne vibration or ground-borne noise levels; or
- C. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

With regard to criterion (a), the proposed Project would result in a significant construction and/or operational noise impact if it would:

- Conflict with or violate any applicable noise-related provision of the Marin County Code, including:
  - The allowable construction time periods set forth in County Code Section 6.70.030 (5);
- Conflict with or violate any applicable noise-related standard or policy in the County's Built Environmental Element, including:
  - Generate transportation noise levels that increase ambient noise levels at off-site locations by:
    - 5 dBA or more where the ambient noise level would remain below the County's acceptable noise level for the affected land use (see Table 15-10);
    - 3 dBA or more where the existing ambient noise level would change; or
    - 1 dBA or more where the existing ambient noise level is already normally unacceptable.
  - Generate stationary source noise levels that exceed the General Plan's Allowable Noise Exposure standards summarized in Table 15-11;

With regard to criterion (b), the proposed Project would result in a significant construction and/or operational vibration impact if it would:

- Generate vibration levels that exceed Caltrans' guidance for potential building damage (see Table 15-8) or human annoyance (see Table 15-9).

With regard to criterion (c), the proposed Project would expose people living or working in the Project planning area to excessive airport-related noise levels if it would conflict with policies contained in the ALUP prepared for Gness Field, the 2007 CWP, or otherwise expose people to excessive airport-related or aircraft-related noise levels.

### 15.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

Neither the Housing Element Update nor the Safety Element Update contain policies or implementing programs that specifically address noise and vibration impacts.

### 15.3.3 Impacts and Mitigations

The following analysis is provided at a programmatic level consistent with the level of detail of the proposed Project. The noise and vibration analysis contained in Section 15.3 is based on the construction and operation of 10,993 dwelling units (candidate housing sites), which are more than the 5,214 dwelling units that would be facilitated by adoption of the Housing Element Update (project sites inventory), and the 3,569 dwelling units that are required by the RHNA. The noise analysis' assumptions, which provide a conservative assessment of potential impacts, are consistent with the land use and transportation modeling assumptions used in the Air Quality (Chapter 6), Greenhouse Gas / Energy Chapter (Chapter 10), and Transportation Chapter (Chapter 18).

**Impact 15-1: Substantial Permanent Increases in Traffic Noise Levels.** [Threshold of Significance (a)] The implementation of the proposed Project could result in a substantial permanent increase in noise levels. This would be a ***potentially significant impact***.

The Housing Element Update would authorize a change in the existing amounts and types of land uses within the County. These potential land use changes would increase the number of residents and/or employees in the County which in turn, would lead to increased vehicle traffic on the local roadway system that could create noise and land use compatibility issues or otherwise result in a substantial permanent increase in noise levels in specific areas of the County.<sup>29</sup> Transportation engineering firm W-Trans conducted a quantitative assessment of potential changes in VMT associated with the implementation of the Project for this EIR (see Chapter 18). This quantitative assessment provides a sufficient level of detail to adequately evaluate at a program-level the potential future increases in traffic-related noise levels on key roads in the County that provide access and travel to destinations within and outside of the County.

Future 2040 traffic noise levels with the implementation of the Housing Element Update were computed using the same methodology (TNM Version 3.1) and data sources used to calculate existing (Year 2019) and future (Year 2040) baseline traffic noise levels (see Section 15.1.6.2), but 2040 traffic levels with the Housing Element Update were determined by the VMT analysis and entered into the traffic noise model.

Table 15-13 and Table 15-14, respectively, summarize the net change in traffic volumes and traffic noise levels that would occur between existing (Year 2019) and future (Year 2040) conditions with the Housing Element Update, and between future (Year 2040) conditions with

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<sup>29</sup>The Project includes both the Housing Element Update and the Safety Element Update; however, only the Housing Element Update would have the potential to increase traffic noise levels. The Safety Element Update does not have the potential to generate long-term changes in typical daily traffic patterns and, therefore, would not result in a traffic noise impact.

and without the implementation of the Housing Element Update.<sup>30</sup> The traffic noise modeling indicates that the existing land uses along most of the modeled roadway segments (49 out of 54) would not experience a substantial increase in traffic noise levels (more than 3 dBA) and/or a potential change in noise and land use compatibility exposure (such as from compatible to incompatible noise exposure levels). as a result of the Housing Element Update. Some roadway segments are predicted to have a significant increase in noise levels, including parts of Miller Creek Road, Nicasio Valley Road, Petaluma Point Reyes Road, Tamalpais Drive, and SR 1. This is primarily due to the fact these roadway segments have relatively low traffic volumes under 2019 and 2040 baseline conditions (less than 5,000 vehicles) and the Housing Element Update is predicted to result in a relatively large increase in traffic under the modeled scenarios. Refer to the Technical Noise Appendix H for detailed transportation noise modeling results.

**Table 15-13:  
Existing (2019) and Future (2040 with Project) Average Daily Traffic (ADT) Volumes and  
Associated Day/Night Average Sound Level (DNL)**

Road / Segment	Year 2019 (Existing)		Year 2040 (With Project)		Net Change	
	ADT	DNL <sup>(A)</sup>	ADT	DNL <sup>(A)</sup>	ADT	DNL <sup>(A)</sup>
<i>Atherton Avenue</i>						
U.S. 101 to SR 37 (Sears Pt. Rd) <sup>(B)</sup>	4,797	62.9	5,765	64.0	968	1.1
<i>Butterfield Road</i>						
Northern terminus to Sir Francis Drake Blvd	1,182	52.5	1,202	52.9	20	0.4
<i>Center Boulevard</i>						
Claus Drive to Sir Francis Drake Blvd <sup>(B)</sup>	15,074	64.8	16,827	65.2	1,753	0.4
<i>College Avenue</i>						
Sir Francis Drake Blvd to Estelle Ave	8,210	59.2	8,992	59.6	783	0.4
<i>Corte Madera Avenue</i>						
Bahr Lane to Redwood Ave <sup>(B)</sup>	11,573	60.9	11,449	60.6	-124	-0.3
<i>Las Galinas Avenue</i>						
Miller Creek Rd to Lucas Valley Rd	6,596	59.6	4,992	58.3	-1,603	-1.3
Lucas Valley Rd to Freitas Pkwy <sup>(B)</sup>	6,230	58.8	7,683	59.5	1,453	0.7
Freitas Pkwy to Northgate Dr <sup>(B)</sup>	5,502	58.1	7,615	59.1	2,112	1.0
<i>Lucas Valley Road</i>						
Nicasio Valley Rd to Mt McKinley Rd	1,548	54.1	4,210	58.7	2,662	4.6
Mt McKinley Rd to Mt Muir Ct	2,975	60.7	5,563	63.2	2,588	2.5
Mt. Muir Ct to Huckleberry Rd	4,045	62.9	6,724	64.8	2,678	1.9
Huckleberry Rd to U.S. 101 <sup>(B)</sup>	4,113	62.1	7,113	64.3	3,000	2.2
<i>Magnolia Avenue</i>						
Estelle Ave to Doherty Dr <sup>(B)</sup>	9,395	60.0	10,136	60.2	741	0.2
Doherty Dr to Bahr Ln <sup>(B)</sup>	8,414	60.4	10,818	61.5	2,404	1.1
<i>Miller Creek Road</i>						
Lucas Valley Rd to Las Galinas Ave	569	48.8	2,460	54.7	1,891	<b>5.9</b>
Las Galinas Ave to U.S. 101	7,479	59.1	7,979	59.1	500	0.0
<i>Nicasio Valley Road</i>						
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,097	60.9	4,779	64.9	2,682	<b>4.0</b>
Lucas Valley Rd to Sir Francis Drake Blvd	1,100	56.4	1,322	57.3	223	0.9
<i>North San Pedro Road</i>						

<sup>30</sup>Because the County's 6<sup>th</sup> Cycle Housing Element covers the period from 2023 to 2031, this EIR presents the comparison of Year 2040 traffic noise levels with the Project to 2019 and 2040 conditions without the Project because both comparisons are considered to provide information that meaningfully informs the analysis of the physical change in traffic noise levels that could occur with the implementation of the Project.

**Table 15-13:  
Existing (2019) and Future (2040 with Project) Average Daily Traffic (ADT) Volumes and  
Associated Day/Night Average Sound Level (DNL)**

Road / Segment	Year 2019 (Existing)		Year 2040 (With Project)		Net Change	
	ADT	DNL <sup>(A)</sup>	ADT	DNL <sup>(A)</sup>	ADT	DNL <sup>(A)</sup>
U.S. 101 to Bucks Landing	6,754	58.7	8,316	57.3	1,562	-1.4
<i>Novato Boulevard</i>						
Pt. Reyes Petaluma Rd to Indian Valley	4,502	63.6	6,870	65.8	2,368	2.2
Indian Valley to San Marin Dr	5,872	63.6	8,209	65.2	2,337	1.6
San Marin Dr to Simmons Lane <sup>(B)</sup>	9,263	63.3	11,411	64.1	2,148	0.8
Simmons Lane to Diablo Ave <sup>(B)</sup>	9,263	65.7	11,411	66.5	2,148	0.8
Diablo Ave to Rowland Blvd <sup>(B)</sup>	4,251	60.3	6,045	61.7	1,794	1.4
Rowland Blvd to U.S. 101 <sup>(B)</sup>	4,251	60.3	6,045	61.6	1,794	1.3
<i>Petaluma Point Reyes Road</i>						
San Antonio Rd to Novato Blvd <sup>(B)</sup>	2,172	61.7	4,888	65.2	2,715	<b>3.5</b>
Novato Blvd to Nicasio Valley Rd	3,224	62.4	6,002	65.0	2,778	2.6
Nicasio Valley Rd to Shoreline Hwy	3,141	61.2	5,651	64.1	2,510	2.9
<i>Red Hill Avenue</i>						
Sir Francis Drake Blvd to Ross Valley Dr <sup>(B)</sup>	26,746	68.9	28,310	69.3	1,564	0.4
<i>San Marin Drive</i>						
Novato Blvd to U.S. 101 <sup>(B)</sup>	5,044	61.7	5,143	62.2	99	0.5
<i>Sir Francis Drake Boulevard</i>						
SR 1 to Platform Bridge Rd	3,328	62.8	4,896	65.5	1,567	2.7
Platform Bridge Rd to Lagunitas Rd	3,279	59.3	4,737	61.5	1,458	2.2
Lagunitas Rd to Nicasio Valley Rd	4,108	58.5	6,101	60.8	1,993	2.3
Nicasio Valley Rd to Olema Rd	6,543	61.3	8,855	62.9	2,312	1.6
Olema Rd to Red Hill Ave <sup>(B)</sup>	13,764	63.3	15,605	63.9	1,840	0.6
<i>Redwood Avenue</i>						
Corte Madera Ave to Tamalpais Dr <sup>(B)</sup>	10,242	60.1	10,720	60.1	478	0.0
<i>Tamalpais Drive</i>						
Redwood Ave to U.S. 101 <sup>(B)</sup>	12,446	63.8	13,205	63.9	760	0.1
<i>Tomales Petaluma Road</i>						
SR 1 to Valley Ford Rd/Spring Hill Rd	2,345	63.2	3,251	64.3	906	1.1
<i>2nd Street</i>						
4 <sup>th</sup> St to 3rd St <sup>(B)</sup>	21,990	67.8	26,132	68.8	4,142	1.0
3rd St to Hetherton St <sup>(B)</sup>	21,990	64.5	26,132	65.5	4,142	1.0
<i>4th Street</i>						
Red Hill Ave to 2 <sup>nd</sup> St <sup>(B)</sup>	28,964	70.3	30,222	70.7	1,258	0.4
<i>U.S. 101</i>						
County Limit to SR 37 <sup>(C)</sup>	102,000	79.5	119,820	80.3	17,820	0.8
SR 37 to I-580 <sup>(C)</sup>	180,934	81.0	204,227	81.4	23,293	0.4
I-580 to County Limit <sup>(C)</sup>	142,500	80.3	161,124	80.9	18,624	0.6
<i>I-580</i>						
U.S. 101 to County Limit <sup>(B)</sup>	70,080	79.5	88,876	80.4	18,796	0.9
<i>SR-1</i>						
County Limit to Tomales Petaluma Rd	2,526	62.8	4,512	64.9	1,986	2.1
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,380	61.1	4,053	64.6	1,673	3.5
Pt Reyes Petaluma Rd to A St	3,913	54.9	5,864	57.1	1,951	2.2
A St to Sir Francis Drake Blvd	3,755	57.5	6,224	60.7	2,469	<b>3.2</b>
Sir Francis Drake Blvd (North) to Sir Francis Drake Blvd (South)	3,575	58.8	5,119	61.6	1,544	2.8
Sir Francis Drake Blvd to County Limit	12,978	70.5	15,728	71.0	2,750	0.5



**Table 15-13:  
Existing (2019) and Future (2040 with Project) Average Daily Traffic (ADT) Volumes and  
Associated Day/Night Average Sound Level (DNL)**

Road / Segment	Year 2019 (Existing)		Year 2040 (With Project)		Net Change	
	ADT	DNL <sup>(A)</sup>	ADT	DNL <sup>(A)</sup>	ADT	DNL <sup>(A)</sup>
<i>SR-37</i>						
U.S. 101 to Atherton Ave <sup>(B)</sup>	31,900	77.6	39,482	78.3	7,582	0.7
Atherton Ave to County Limit <sup>(B)</sup>	33,800	75.3	42,381	76.1	8,581	0.8
<i>SR-131</i>						
U.S. 101 to Trestle Glen Blvd <sup>(B)</sup>	34,275	73.3	37,355	73.7	3,080	0.4

Source: MIG, 2022 (see the Technical Noise Appendix H)

- A. The day/night average sound level (DNL) is predicted at 50 feet from the road centerline (excepting U.S. 101). *Italicized* text indicates the predicted DNL value is above the County's normally acceptable land use value (see Table 15-10) for the predominant land use present along the modeled roadway segment (note in some instances the Project could change the predominant land use type along the roadway segment). This is only identified for road segments that are under the County's jurisdiction. **Bold** text indicates the net increase in modeled traffic noise exceeds the significance criteria enumerated in Section 15.3.1 and thus represents a potentially significant impact (i.e., the increase in modeled traffic noise is either more than 3 DNL (where noise exposure is caused to or already exceeds the County's acceptable level) or more than 5 DNL (regardless of whether noise exposure is acceptable or not).
- B. This road segment is either partially or wholly outside the County's jurisdiction (i.e., is within a city).
- C. Modeled traffic noise levels for U.S. 101 are predicted 100 feet from the highway centerline.

**Table 15-14:  
Future (2040) Average Daily Traffic (ADT) Volumes and Associated Day/Night Average  
Sound Levels (Dnl) with and Without the Project**

Road/Segment	Year 2040 (Without Project)		Year 2040 (With Project)		Net Change	
	ADT	DNL(A)	ADT	DNL(A)	ADT	DNL(A)
<i>Atherton Avenue</i>						
U.S. 101 to SR 37 (Sears Pt. Rd) <sup>(B)</sup>	5,321	63.5	5,765	64.0	444	0.5
<i>Butterfield Road</i>						
Northern terminus to Sir Francis Drake Blvd	1,137	52.7	1,202	52.9	65	0.2
<i>Center Boulevard</i>						
Claus Drive to Sir Francis Drake Blvd <sup>(B)</sup>	16,170	65.0	16,827	65.2	657	0.2
<i>College Avenue</i>						
Sir Francis Drake Blvd to Estelle Ave	8,412	59.5	8,992	59.6	581	0.1
<i>Corte Madera Avenue</i>						
Bahr Lane to Redwood Ave <sup>(B)</sup>	11,211	60.7	11,449	60.6	238	-0.1
<i>Las Galinas Avenue</i>						
Miller Creek Rd to Lucas Valley Rd	5,399	58.9	4,992	58.3	-407	-0.6
Lucas Valley Rd to Freitas Pkwy <sup>(B)</sup>	7,421	59.3	7,683	59.5	262	0.2
Freitas Pkwy to Northgate Dr <sup>(B)</sup>	3,831	56.3	7,615	59.1	3,783	2.8
<i>Lucas Valley Road</i>						
Nicasio Valley Rd to Mt McKinley Rd	4,288	58.9	4,210	58.7	-78	-0.2
Mt McKinley Rd to Mt Muir Ct	5,590	63.3	5,563	63.2	-27	-0.1
Mt. Muir Ct to Huckleberry Rd	6,546	64.8	6,724	64.8	178	0.0
Huckleberry Rd to U.S. 101 <sup>(B)</sup>	5,692	63.4	7,113	64.3	1,422	0.9
<i>Magnolia Avenue</i>						
Estelle Ave to Doherty Dr <sup>(B)</sup>	9,886	60.3	10,136	60.2	250	-0.1
Doherty Dr to Bahr Ln <sup>(B)</sup>	10,429	61.5	10,818	61.5	388	0.0
<i>Miller Creek Road</i>						

**Table 15-14:  
Future (2040) Average Daily Traffic (ADT) Volumes and Associated Day/Night Average  
Sound Levels (Dnl) with and Without the Project**

Road/Segment	Year 2040 (Without Project)		Year 2040 (With Project)		Net Change	
	ADT	DNL(A)	ADT	DNL(A)	ADT	DNL(A)
Lucas Valley Rd to Las Galinas Ave	1,649	53.3	2,460	54.7	810	1.4
Las Galinas Ave to U.S. 101	6,586	58.8	7,979	59.1	1,393	0.3
<i>Nicasio Valley Road</i>						
Pt Reyes Petaluma Rd to Lucas Valley Rd	4,716	64.8	4,779	64.9	63	0.1
Lucas Valley Rd to Sir Francis Drake Blvd	1,189	56.8	1,322	57.3	133	0.5
<i>North San Pedro Road</i>						
U.S. 101 to Bucks Landing	7,790	59.2	8,316	57.3	526	-1.9
<i>Novato Boulevard</i>						
Pt. Reyes Petaluma Rd to Indian Valley	6,123	65.0	6,870	65.8	747	0.8
Indian Valley to San Marin Dr	7,146	64.4	8,209	65.2	1,063	0.8
San Marin Dr to Simmons Lane <sup>(B)</sup>	10,176	63.6	11,411	64.1	1,235	0.5
Simmons Lane to Diablo Ave <sup>(B)</sup>	10,176	66.0	11,411	66.5	1,235	0.5
Diablo Ave to Rowland Blvd <sup>(B)</sup>	5,595	61.3	6,045	61.7	450	0.4
Rowland Blvd to U.S. 101 <sup>(B)</sup>	5,595	61.3	6,045	61.6	450	0.3
<i>Petaluma Point Reyes Road</i>						
San Antonio Rd to Novato Blvd <sup>(B)</sup>	4,868	65.0	4,888	65.2	20	0.2
Novato Blvd to Nicasio Valley Rd	5,833	64.9	6,002	65.0	169	0.1
Nicasio Valley Rd to Shoreline Hwy	4,224	63.3	5,651	64.1	1,428	0.8
<i>Red Hill Avenue</i>						
Sir Francis Drake Blvd to Ross Valley Dr <sup>(B)</sup>	27,369	69.1	28,310	69.3	941	0.2
<i>San Marin Drive</i>						
Novato Blvd to U.S. 101 <sup>(B)</sup>	4,602	61.7	5,143	62.2	541	0.5
<i>Sir Francis Drake Boulevard</i>						
SR 1 to Platform Bridge Rd	4,043	64.2	4,896	65.5	853	1.3
Platform Bridge Rd to Lagunitas Rd	4,043	60.2	4,737	61.5	695	1.3
Lagunitas Rd to Nicasio Valley Rd	5,095	59.5	6,101	60.8	1,006	1.3
Nicasio Valley Rd to Olema Rd	7,270	61.8	8,855	62.9	1,586	1.1
Olema Rd to Red Hill Ave <sup>(B)</sup>	14,466	63.5	15,605	63.9	1,139	0.4
<i>Redwood Avenue</i>						
Corte Madera Ave to Tamalpais Dr <sup>(B)</sup>	10,587	60.2	10,720	60.1	133	-0.1
<i>Tamalpais Drive</i>						
Redwood Ave to U.S. 101 <sup>(B)</sup>	12,611	60.2	13,205	63.9	594	<b>3.7</b>
<i>Tomales Petaluma Road</i>						
SR 1 to Valley Ford Rd/Spring Hill Rd	2,882	64.0	3,251	64.3	369	0.3
<i>2nd Street</i>						
4 <sup>th</sup> St to 3rd St <sup>(B)</sup>	25,193	68.6	26,132	68.8	939	0.2
3rd St to Hetherton St <sup>(B)</sup>	25,193	65.3	26,132	65.5	939	0.2
<i>4th Street</i>						
Red Hill Ave to 2 <sup>nd</sup> St <sup>(B)</sup>	29,400	70.6	30,222	70.7	821	0.1
<i>U.S. 101</i>						
County Limit to SR 37 <sup>(C)</sup>	116,864	80.0	119,820	80.3	2,956	0.3
SR 37 to I-580 <sup>(C)</sup>	194,067	81.4	204,227	81.4	10,160	0.0
I-580 to County Limit <sup>(C)</sup>	152,475	80.7	161,124	80.9	8,649	0.2
<i>I-580</i>						
U.S. 101 to County Limit <sup>(B)</sup>	83,410	80.1	88,876	80.4	5,466	0.3
<i>SR-1</i>						
County Limit to Tomales Petaluma Rd	4,032	64.4	4,512	64.9	480	0.5

**Table 15-14:  
Future (2040) Average Daily Traffic (ADT) Volumes and Associated Day/Night Average  
Sound Levels (Dnl) with and Without the Project**

Road/Segment	Year 2040 (Without Project)		Year 2040 (With Project)		Net Change	
	ADT	DNL(A)	ADT	DNL(A)	ADT	DNL(A)
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	3,970	64.3	4,053	64.6	83	0.3
Pt Reyes Petaluma Rd to A St	5,465	56.9	5,864	57.1	400	0.2
A St to Sir Francis Drake Blvd	5,585	60.2	6,224	60.7	639	0.5
Sir Francis Drake Blvd (North) to Sir Francis Drake Blvd (South)	4,439	60.6	5,119	61.6	680	1.0
Sir Francis Drake Blvd to County Limit	15,154	70.9	15,728	71.0	574	0.1
<i>SR-37</i>						
U.S. 101 to Atherton Ave <sup>(B)</sup>	38,579	78.0	39,482	78.3	903	0.3
Atherton Ave to County Limit <sup>(B)</sup>	41,306	75.8	42,381	76.1	1,075	0.3
<i>SR-131</i>						
U.S. 101 to Trestle Glen Blvd <sup>(B)</sup>	35,956	73.6	37,355	73.7	1,399	0.1

Source: MIG, 2022 (see the Technical Noise Appendix H)

- A. The day/night average sound level (DNL) is predicted at 50 feet from the road centerline (excepting U.S. 101). *Italicized* text indicates the predicted DNL value is above the County's normally acceptable land use value (see Table 15-10) for the predominant land use present along the modeled roadway segment (note in some instances the Project could change the predominant land use type along the roadway segment). This is only identified for road segments that are under the County's jurisdiction. **Bold** text indicates the net increase in modeled traffic noise exceeds the significance criteria enumerated in Section 15.3.1 and thus represents a potentially significant impact (i.e., the increase in modeled traffic noise is either more than 3 DNL (where noise exposure is caused to or already exceeds the County's acceptable level) or more than 5 DNL (regardless of whether noise exposure is acceptable or not).
- B. This road segment is either partially or wholly outside the County's jurisdiction (i.e., is within a city).
- C. Modeled traffic noise levels for U.S. 101 are predicted 100 feet from the highway centerline.

The results of the traffic noise modeling indicate noise levels in the unincorporated area of the County would continue to be highest along major arterials (e.g., Atherton Avenue, Lucas Valley Road, Nicasio Valley Road, Novato Boulevard, Petaluma Point Reyes Road, and Sir Francis Drake Boulevard) and highways. Specifically, the modeling shows:

- **Atherton Avenue:** Modeled traffic noise levels are 62.9 DNL (2019) and 63.5 DNL (2040 without the Project) at 50 feet from the center of the roadway. Under both conditions, agricultural lands are the predominant land use along this segment of Atherton Avenue. The Project (in 2040) could increase noise levels on Atherton Avenue to 64 DNL, an increase of 1.1 dBA above 2019 conditions and 0.5 dBA above 2040 conditions without the Project. In addition, the Project could result in a change in land use along Atherton Avenue from predominantly agricultural use to predominantly residential use. The modeled traffic noise levels with the Project (64 DNL) would exceed the County's acceptable noise exposure level for single-family residential land uses (60 DNL, see Table 15-10); however, the Project would not increase noise levels by 3 dBA or more and, therefore, would not result in a significant project-or cumulative-level change in traffic noise levels along Atherton Avenue.
- **Lucas Valley Road:** Modeled traffic noise levels between Mount McKinley Road and Huckleberry Road are 60.7 DNL (2019) and 64.8 DNL (2040 without the Project) at 50 feet from the center of the roadway. Under both conditions, single-family residences are the predominant land use along this segment of Lucas Valley Road. The Project (in 2040) could increase noise levels on Lucas Valley Road to 64.8 DNL, an increase of up to 2.5 dBA above 2019 conditions and 0.0 dBA above 2040 conditions without the

Project. The modeled traffic noise levels with the Project (64.8 DNL) would continue to exceed the County's acceptable noise exposure level for single-family residential land uses (60 DNL, see Table 15-10); however, the Project would not increase noise levels by 3 dBA or more and, therefore, would not result in a significant project-or cumulative-level change in traffic noise levels along this segment of Lucas Valley Road.

- **Miller Creek Road:** Modeled traffic noise levels between Lucas Valley Road and Las Gallinas Avenue are 48.8 DNL (2019) and 53.3 DNL (2040 without the Project) at 50 feet from the center of the roadway. Under both conditions, single-family residences are the predominant land use along this segment of Miller Creek Road. The Project (in 2040) could increase noise levels on this segment of Miller Creek Road to 54.7 DNL, an increase of up to 5.9 dBA above 2019 conditions and 1.4 dBA above 2040 conditions without the Project. The modeled traffic noise levels with the Project (54.7 DNL) would continue to be below the County's acceptable noise exposure level for single-family residential land uses (60 DNL, see Table 15-10), but the Project would contribute to an increase in noise levels on this road segment of more than 5 dBA (as compared to 2019 conditions). The Project would, therefore, contribute to a significant project-and cumulative-level change in traffic noise levels along Miller Creek Road.<sup>31</sup>
- **Nicasio Valley Road:** Modeled traffic noise levels between Point Reyes Petaluma Road and Lucas Valley Road are 60.9 DNL (2019) and 64.8 DNL (2040 without the Project) at 50 feet from the center of the roadway. Under both conditions, agricultural lands are the predominant land use along this segment of Lucas Valley Road. The Project (in 2040) could increase noise levels on Nicasio Valley Road to 64.9 DNL, an increase of up to 4.0 dBA above 2019 conditions and 0.1 dBA above 2040 conditions without the Project. In addition, the Project could add single-family/agricultural residences to this segment of Nicasio Valley Road. The modeled traffic noise levels with the Project (64.8 DNL) would continue to exceed the County's acceptable noise exposure level for single-family residential land uses (60 DNL, see Table 15-10), and the Project would contribute to an increase in noise levels on this road segment of more than 3 dBA. The Project would, therefore, contribute to a significant project- and cumulative-level change in traffic noise levels along Nicasio Valley Road.
- **Novato Boulevard:** Modeled traffic noise levels between Indian Valley and San Marin Drive are 63.6 DNL (2019) and 64.4 DNL (2040 without the Project) at 50 feet from the center of the roadway. Under both conditions, agricultural lands are the predominant land use along this segment of Novato Boulevard Road. The Project (in 2040) could increase noise levels on Novato Boulevard to 64.9 DNL, an increase of up to 1.6 dBA above 2019 conditions and 0.8 dBA above 2040 conditions without the Project. In addition, the proposed Project could add single-family residences to this segment of Novato Boulevard. The modeled traffic noise levels with the Project (64.9 DNL) would continue to exceed the County's acceptable noise exposure level for single-family residential land uses (60 DNL, see Table 15-10); however, the Project would not increase noise levels by 3 dBA or more and, therefore, would not result in a significant project-or cumulative-level change in traffic noise levels along Novato Boulevard.

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<sup>31</sup>This impact is considered to be both a project-level impact and a cumulative level impact because, as shown in Table 13-13 and Table 13-14, the Project would contribute to an overall increase in traffic noise levels of 3 dBA or more (in areas where noise levels are above acceptable values) or 5 dBA or more (where noise levels would remain acceptable).

- **Sir Francis Drake Boulevard:** Modeled traffic noise levels between Lagunitas Road and Nicasio Valley Road are 58.5 DNL (2019) and 59.5 DNL (2040 without the Project) at 50 feet from the center of the roadway. Under both conditions, single-family residences are the predominant land use along this segment of Sir Francis Drake Boulevard. The Project (in 2040) could increase noise levels on this segment of Sir Francis Drake Boulevard to 60.8 DNL, an increase of up to 2.3 dBA above 2019 conditions and 1.3 dBA above 2040 conditions without the Project. The modeled traffic noise levels with the Project (60.8 DNL) would exceed the County's acceptable noise exposure level for single-family residential land uses (60 DNL, see Table 15-10); however, the Project would not increase noise levels by 3 dBA or more and, therefore, would not result in a significant project-or cumulative-level change in traffic noise levels along this segment of Sir Francis Drake Boulevard.
- **SR 1:** Modeled traffic noise levels between A Street and Sir Francis Drake Boulevard are 57.5 DNL (2019) and 60.2 DNL (2040 without the Project) at 50 feet from the center of the roadway. Under both conditions, a mix of commercial, single-family residences, and open space/agricultural lands are the predominant land use along this segment of SR 1. The Project (in 2040) could increase noise levels on this segment of SR 1 to 60.7 DNL, an increase of up to 3.2 dBA above 2019 conditions and 0.5 dBA above 2040 conditions without the Project. The modeled traffic noise levels with the Project (60.7 DNL) would exceed the County's acceptable noise exposure level for single-family residential land uses (60 DNL, see Table 15-10), and the Project would contribute to an increase in noise levels on this road segment of more than 3 dBA. The Project would, therefore, result in a significant project- and cumulative-level change in traffic noise levels along this segment of SR 1.
- **Roads in Incorporated Cities:** In addition to the specific impacts on roadway segments in the unincorporated area of the County, the Project could also result in more than a 3 dBA increase in traffic noise levels on roadway segments within incorporated cities, including Petaluma Point Reyes Road (between San Antonio Road and Novato Boulevard) and Tamalpais Drive (between Redwood Avenue and the U.S. 101 ramps). The predominant land use along these road segments includes residences that could be exposed to noise levels above 60 DNL. The Project would contribute to an increase in noise levels on these road segments of more than 3 dBA and, therefore, result in a significant project- and cumulative-level change in traffic noise levels along these roadway segments.

The 2007 CWP (Goal NO-1) establishes the County's intent to provide protection from excessive noise levels and ensure that new land uses and transportation activities do not create noise levels that impair human health or quality of life. The 2007 CWP identifies vehicle traffic as the primary contributor to the County's noise environment and, therefore, includes policies that emphasize the reduction of transportation-related noise impacts on residential and other sensitive land uses (refer to Section 15.2.3.2 for specific policy language). Policy NO-1.1 (Limit Noise from New Development) requires new development projects to be designed to meet acceptable noise levels established by the 2007 CWP, including a 60 DNL standard for single-family residential land uses and a 65 DNL standard for multi-family residential land uses (see Table 15-10). Policy NO-1.2 (Minimize Transportation Noise) also requires transportation activities to meet acceptable noise levels. Finally, Policy NO-1.4 requires the County to promote noise reduction technologies and alternatives to sound walls to mitigate Highway 101 noise levels. The 2007 CWP implements these policies through programs that enforce allowable noise levels and require project-specific noise mitigation if noise impacts occur, including Programs

NOI-1.a (Enforce Allowable Noise Level), NOI-1.b (Comply with Acceptable Noise Levels), and NOI-1.c (Require Project-Specific Noise Mitigation).

Although the 2007 CWP addresses noise from new development projects, its policies and program are limited in their ability to protect existing land uses from the predicted increases in vehicle traffic that would occur in Year 2040 with and without the Project (see Table 15-4 and Table 15-14). The installation of physical barriers to reduce noise levels at existing residential land uses is not considered feasible mitigation along impacted roadway segments (Miller Creek Road, Nicasio Valley Road, SR 1, and incorporated city roads) because most segments are already developed and cannot accommodate the installation of a barrier without landowner access, authorization, and potential easement dedication, all of which are outside the County's control and none of which could be guaranteed at this time. In addition, the installation of a physical barrier along rural roads is generally incompatible with the rural nature of these areas.

The 2007 CWP and the County's Climate Action Plan include measures to reduce vehicle miles travelled from development projects (see Chapter 18 and Chapter 10, respectively), and Mitigation Measure 18-4 requires future residential development projects to achieve a 15% reduction in VMT below the regional average residential VMT per capita. These measures would reduce vehicle trips and lower traffic-related noise levels; however, it is not known which specific roadway segments would experience a reduction in vehicle trips and traffic-related noise due to this mitigation; therefore, no noise reduction has been assumed in this analysis for VMT and trip reduction measures required by existing County policies or Mitigation Measure 18-4. For this reason, the traffic noise modeling conducted for this EIR likely overestimates increases in ADT volumes and associated traffic noise levels for the modeled scenarios.

In addition, as explained above, this EIR evaluates potential increases in traffic noise levels based on an amount of housing growth (10,993 candidate housing units) that is greater than both the County's 6<sup>th</sup> Cycle RHNA (3,569 housing units) and the proposed Project, which consists of the number of units planned for in the Housing Element Update (5,214 housing units under the project sites inventory). While individual projects typically result in local traffic noise impacts on roadways used to access a site, cumulative development, particularly on a county-wide basis, consists of traffic from one or more development projects in combination using the same roadway segments, particularly major arterial roads. Because this EIR's traffic noise analysis is based on a larger amount of housing growth than will be authorized by the Housing Element Update, it is probable that the traffic noise analysis overestimates the cumulative change in ADT volumes and associated traffic noise levels that could result from the Housing Element Update on some major roadways. Changes in cumulative traffic volumes and associated traffic noise levels would be contingent on which housing sites are developed, the specific characteristics of each development project (e.g., density, proximity to transit, etc.), the roadway geometry, travel speed, and fleet mix on individual road segments, and the overall operation of the County's transportation system. Although reductions in traffic volumes and traffic noise levels would not likely scale linearly (i.e., a 50% reduction in modeled housing units would not necessarily result in a 50% reduction in modeled traffic volumes on one or all modeled roadway segments), a level of housing growth that is less than that analyzed in this EIR would be likely to result in lower ADT volumes and traffic noise levels on modeled roadway segments. Based on the traffic noise modeling conducted for this EIR, impacted roadway segments (Miller Creek Road, Nicasio Valley Road, SR 1, and incorporated city roads) would require an approximately 5% to 30% reduction in modeled traffic volumes (under future 2040 conditions with the Housing Element Update) to fully avoid potential traffic noise impacts associated with the housing growth modeled for this EIR's noise analysis.

As discussed above, the Housing Element Update could result in a substantial permanent change in modeled traffic noise levels in areas already affected by high noise levels that exceed County guidelines for noise and land use compatibility. Because a reduction in vehicle trips on specific, impacted roadway segments cannot be guaranteed, and future traffic noise levels would increase by 3 dB or more in areas where noise levels would exceed acceptable levels, and by 5 dB or more in other areas where noise levels would remain acceptable, this impact would remain **significant and unavoidable**.

**Mitigation Measure 15-1.** Reduce VMT from New Residential Development. Implement Mitigation Measure 18-4 (Transportation).

**Mitigation Measure 18-4.** Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, OPR, 2018 (or subsequent updates), or future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments. For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a major role in most cases. Following are TDM and other strategies that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.

- Subsidize resident transit passes
- Provide or participate in established ride-matching program(s)
- Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator
- Complete bus stop improvements or on-site mobility hubs
- Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit
- Reduce parking supply at affordable or senior projects and projects that are well-served by transit
- Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present
- Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)
- Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.

Even with implementation of this mitigation measure, this impact would remain **significant and unavoidable**.

**Impact 15-2: Permanent Increases in Stationary and Other On-site Noise Levels.**

[Threshold of Significance (a)] Stationary and other sources of noise in the County include, but are not limited to, landscape and building maintenance activities, stationary mechanical equipment (e.g., pumps, generators, HVAC units), garbage collection activities, commercial and industrial activities, and other sources such as people's voices, amplified music, recreational activities, and special events. The Project would have the potential to support a change in the existing amounts and types of land uses within the County that could result in an increase in stationary and other on-site noise levels. These new, resilient land uses would involve similar noise generating sources and activities as the existing land uses; however, the amount of mechanical equipment, the frequency of landscaping and garbage collection activities, and the intensity of parking and other activities could increase due to the higher density and mixed-use residential developments planned for by the Housing Element Update as well as the potential incorporation of environmental hazard, vulnerability, and emergency/disaster preparedness considerations planned for by the Safety Element Update.

Although the Project could increase the amount of noise sources and noise-generating activities compared to existing conditions, it would have a limited potential to generate significant on-site noise levels that could impact existing and/or future noise-sensitive land uses for several reasons. In general, residential land uses are not a substantial noise-generating land use type because they do not include substantial outdoor mechanical equipment, do not involve substantial noise-generating activities during the nighttime, and usually screen or enclose amenities such as pools and other amenities. In addition, as discussed above, the 2007 CWP provides protection from excessive noise levels, ensures that new land uses do not create noise levels that impair human health or quality of life, and includes policies that emphasize the reduction of noise impacts on residential and other sensitive land uses. Specifically, Policy NO-1.1 (Limit Noise from New Development) and Policy NO-1.3 (Regulate Noise Generating Activities) require new development projects to meet acceptable noise levels and minimize noise exposure to neighboring properties, while Programs NOI-1.a (Enforce Allowable Noise Level), NOI-1.b (Comply with Acceptable Noise Levels), and NOI-1.c (Require Project-Specific Noise Mitigation) implement these policies, enforce allowable noise levels, and require project-specific noise mitigation if noise impacts occur. In addition, Program NOI-1.d (Set Additional Limits for Housing) sets maximum exterior (60 dBA DNL) and interior (45 dBA DNL) noise limits for all new residential units. These policies and programs would protect existing and future residents from excessive noise levels by ensuring new development projects meet County noise standards through appropriate, project-specific evaluation and design considerations. For these reasons, the Project would not expose existing or future noise sensitive land uses to substantial permanent increases in stationary and other on-site noise levels. This impact would be ***less-than-significant***.

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**Impact 15-3: Temporary Construction Noise Levels.** [Threshold of Significance (a)] The Project provides updated planning objectives, policies, and programs that are intended to support and provide opportunities for housing development and protect the public from potential environmental hazards. The development of future housing sites and implementation of physical projects that reduce the County's vulnerability to environmental hazards such as climate change would result in temporary noise generation, primarily from the use of heavy-duty construction equipment.

The Project primarily supports higher density residential and mixed-use development on vacant sites and underutilized sites throughout the County, although most candidate sites are located in



the eastern part of the County. The construction of these new projects could affect existing or future land uses, including potentially sensitive residential, school, and park/open space land uses that may or may not currently be present near housing sites. Because individual project-specific information is not available at this time, potential short-term (construction-related) noise impacts can only be evaluated based on the typical construction activities associated with residential and mixed-use development. Potential construction noise levels were developed based on methodologies, reference noise levels, typical equipment usage, and other operating factors documented and contained in the FHWA's Construction Noise Handbook, FTA's Transit Noise and Vibration Impact Assessment document, and Caltrans' Transportation and Construction Vibration Guidance Manual.<sup>32,33,34</sup> Reference levels are sound power or sound pressure data for specific equipment or activity types that are well-documented and for which their usage is common practice in the field of acoustics.

Construction activities associated with the development of housing sites could include staging, demolition, site preparation (e.g., land clearing), fine and mass grading, utility trenching, foundation work (e.g., excavation, pouring concrete pads, drilling for piers), material deliveries (requiring travel along County and city roads), building construction (e.g., framing, concrete pouring, welding), paving, coating application, and site finishing work. In general, these activities would involve the use of worker vehicles, delivery trucks, dump trucks, and heavy-duty construction equipment such as (but not limited to) backhoes, tractors, loaders, graders, excavators, rollers, cranes, material lifts, generators, and air compressors. These types of construction activities would generate noise and vibration from the following sources:

- **Heavy equipment operations.** Some heavy equipment would consist of mobile equipment such as a loader and excavator that would move around work areas; other equipment would consist of stationary equipment (e.g., cranes, generators, or material hoists/lifts) that would generally operate in a fixed location until work activities are complete. Heavy equipment generates noise from engine operation, mechanical systems, and components (e.g., fans, gears, propulsion of wheels or tracks), and other sources such as back-up alarms. Mobile equipment generally operates at different loads, or power outputs, and produces higher or lower noise levels depending on the operating load. Stationary equipment generally operates at a steady power output that produces a constant noise level.
- **Worker, vendor, and haul truck trips.** These trips are likely to primarily occur on key arterial roads and travel corridors that provide access to housing sites. Worker trips usually consist of passenger cars and light- to medium-duty trucks. Vendor and haul truck trips usually consist of medium-heavy and heavy-heavy duty trucks.

Table 15-15 presents the noise levels associated with the typical types of construction equipment that could be used to construct future development projects at housing sites.

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<sup>32</sup>Federal Highway Administration, "Construction Noise Handbook, Chapter 9 Construction Equipment Noise Levels and Ranges," 2017. Accessed online at: [https://www.fhwa.dot.gov/environment/noise/construction\\_noise/handbook/handbook09.cfm](https://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm).

<sup>33</sup>U.S. Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Section 7.1.

<sup>34</sup>California Department of Transportation (Caltrans) 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol, Section 7.5.1.

**Table 15-15:  
Typical Construction Equipment Noise Levels**

Equipment	Reference Noise Level at 50 Feet ( $L_{max}$ ) <sup>(A)</sup>	Percent Usage Factor <sup>(B)</sup>	Predicted Noise Levels ( $L_{eq}$ ) at Distance <sup>(C)</sup>					
			50 Feet	100 Feet	200 Feet	300 Feet	400 Feet	500 Feet
Auger Drill Rig	85	0.2	78	72	66	62	60	58
Backhoe	80	0.4	76	70	64	60	58	56
Boring Jack Power Unit	80	0.5	77	71	65	61	59	57
Bulldozer	85	0.4	81	75	69	65	63	61
Compact roller	80	0.2	73	67	61	57	55	53
Compressor	80	0.4	76	70	64	60	58	56
Concrete Mixer	85	0.4	81	75	69	65	63	61
Crane	85	0.16	77	71	65	61	59	57
Delivery Truck	84	0.4	80	74	68	64	62	60
Excavator	85	0.4	81	75	69	65	63	61
Front End Loader	80	0.4	76	70	64	60	58	56
Generator	82	0.5	79	73	67	63	61	59
Horizontal Boring Hydraulic Jack	80	0.25	74	68	62	58	56	54
Impact Pile Driver (low)	95	0.2	88	82	76	72	70	68
Impact Pile Driver (high)	101	0.2	94	88	82	78	76	74
Man Lift	85	0.2	78	72	66	62	60	58
Paver	85	0.5	82	76	70	66	64	62
Pneumatic tools	85	0.5	82	76	70	66	64	62
Pumps	77	0.5	74	68	62	58	56	54
Roller	85	0.2	78	72	66	62	60	58
Scraper	85	0.4	81	75	69	65	63	61
Tractor	84	0.4	80	74	68	64	62	60
Vacuum Truck	85	0.4	81	75	69	65	63	61

Sources: Caltrans 2013, FHWA 2017, and FTA 2018 (see notes 32, 33, and 34)

- A.  $L_{max}$  noise levels based on manufacturer’s specifications.
- B. Usage factor refers to the amount of time the equipment produces noise over the time period.
- C. Estimate does not account for any shielding or atmospheric or ground attenuation factors. Calculated noise levels based on Caltrans, 2013:  $L_{eq}$  (hourly) =  $L_{max}$  at 50 feet –  $20\log(D/50) + 10\log(UF)$ , where:  $L_{max}$  = reference  $L_{max}$  from manufacturer or other source; D = distance of interest; UF = usage fraction or fraction of time period of interest equipment is in use.

Construction noise impacts generally occur when construction activities occur in areas immediately adjoining noise sensitive land uses, during noise sensitive times of the day (e.g., nighttime), or when construction lasts over extended periods of time. Demolition, site preparation, and grading phases typically result in the highest temporary noise levels due to the use of heavy-duty equipment such as bulldozers, excavators, graders, loaders, scrapers, and trucks. As shown in Table 15-15, the worst-case noise levels associated with the operation of a typical bulldozer or scraper would be approximately 81 dBA  $L_{eq}$  and 85 dBA  $L_{max}$  at a distance of 50 feet from the equipment operating area. At an active construction site, it is not uncommon for two or more pieces of construction equipment to operate at the same time and in close proximity. The concurrent operation of two or more pieces of construction equipment would

result in noise levels of approximately 86 dBA  $L_{eq}$  and 88 dBA  $L_{max}$  at a distance of 50 feet from equipment operating areas.<sup>35</sup>

The magnitude of each individual future project's temporary and periodic increase in ambient noise levels would depend on a number of project-specific factors that are not known at this time, including: the amount and type of equipment being used; the distance between the area where equipment is being operated and the location of the specific land use or receptor where noise levels are being evaluated; the time of day construction activities are occurring; the presence or absence of any walls, buildings, or other barriers that may absorb or reflect sound waves; the total duration of the construction activities; and the existing ambient noise levels near construction areas. For example, a noise level of 88 dBA  $L_{max}$  would be similar to typical  $L_{max}$  levels measured near many housing sites, but sustained  $L_{eq}$  levels of 86 dBA would be approximately 17 dBA to 34 dBA above the typical daytime ambient noise levels in these areas (see Table 15-4). Typical practices for reducing construction noise include staging area restrictions (e.g., siting staging areas away from sensitive receptors), equipment controls (e.g., covered engines and use of electrical hook-ups instead of generators), and/or the installation of temporary noise barriers of sufficient height, size (length or width), and density to achieve targeted noise reductions.

The 2007 CWP and the County Code include provisions to address temporary construction noise levels. As described under Impact 15-1, the CWP provides protection from excessive noise levels, including construction noise, ensures that new land uses do not create noise levels that impair human health or quality of life, and includes policies that emphasize the reduction of noise impacts on residential and other sensitive land uses. Specifically, Policy NO-1.3 (Regulate Noise Generating Activities) require new development projects to minimize construction noise exposure to neighboring properties, while Program NOI-1.i (Regulate Noise Sources) implements this policy by requiring projects to comply with the allowable construction hours established by the Marin County Code and, where significant construction noise impact may occur, the preparation of construction noise reduction plan that includes provisions for reducing construction noise levels. Pursuant to Section 6.70.030 (5) of the Marin County Code, construction activities and other similar work are permitted to occur from 7 AM to 6 PM, Monday to Friday, and 9 AM to 5 PM on Saturday; construction activities are prohibited on Sundays and holidays. Furthermore, the County Code restricts the use of loud noise-generating construction-related equipment such as (but not limited to) backhoes, generators, and jackhammers to the hours of 8 AM to 5 PM Monday through Friday for permits administered by the Community Development Agency.<sup>36</sup>

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<sup>35</sup>As shown in Table 15-15, a single bulldozer provides a sound level of 81 dBA  $L_{eq}$  at a distance of 50 feet; when two identical sound levels are combined, the noise level increases to 84 dBA  $L_{eq}$  and when three identical sound levels are combined, the noise level increases to 86 dBA  $L_{eq}$ . These estimates assume no shielding or other noise control measures are in place at or near the work areas. It is unlikely that more than two pieces of equipment would operate under maximum load in the same area at the same time and, therefore, maximum noise levels would be approximately 88 dBA  $L_{max}$ .

<sup>36</sup>Pursuant to County Code Section 6.70.030 (5)c, an exception to these limits may occur for: emergency work; construction projects of city, county, state, other public agency, or other public utility; when written permission from the Community Development Director has been obtained; minor jobs (e.g., painting, hand sanding) with minimal/no noise impacts on surrounding properties; and modifications by the review authority as a discretionary permit condition of approval.

Although neither the 2007 CWP or the Marin County Code establish specific, numeric noise standards (e.g., 90 dBA  $L_{eq}$ ) for construction activities, 2007 CWP Goal NO-1, Policy NO-1.3, and Implementing Program NO-1.i establish the overall goal and intent of the County to protect noise sensitive uses by limiting construction noise levels and sets forth a requirement to assess and minimize construction noise levels as part of the development review process. Furthermore, Marin County Code Section Sections 6.70.030(5) limits the allowable hours of construction and the time period when loud noise-generating construction equipment may be maintained, operated, or serviced. These policies, programs, and enforceable code requirements would protect existing and future residents from potential substantial, temporary increases in ambient noise levels associated with construction activities. For these reasons, the proposed Project would not result in a substantial temporary increase in noise levels. This impact would be **less-than-significant**.

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**Impact 15-4: Generation of Groundborne Vibration and Noise.** [Threshold of Significance (b)] The development of future housing sites and implementation of physical projects that reduce the County's vulnerability to environmental hazards such as climate change could result in temporary and permanent sources of groundborne vibration; however, as described below, this impact would be less than significant.

#### *Temporary Construction Vibration Levels*

Construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and activities involved. Vibration generated by construction equipment spreads through the ground and diminishes with increases in distance. The effects of ground vibration may be imperceptible at the lowest levels, result in low rumbling sounds and detectable vibrations at moderate levels, and at high levels can cause sleep disturbance in places where people normally sleep or annoyance in buildings that are primarily used for daytime functions and sleeping (e.g., a hospital). Ground vibration can also potentially damage the foundations and exteriors of existing structures even if it does not result in a negative human response. Pile drivers and other pieces of high-impact construction equipment are generally the primary cause of construction-related vibration impacts. The use of such equipment is generally limited to sites where there are extensive layers of very hard materials (e.g., compacted soils, bedrock) that must be loosened or penetrated to achieve grading and foundation design requirements. The need for such methods is usually determined through site-specific geotechnical investigations that identify the subsurface materials within the grading envelope, along with foundation design recommendations and the construction methods needed to safely develop a site.

Construction equipment and activities are categorized by the nature of the vibration they produce. Equipment or activities typical of continuous vibration include excavation equipment, static compaction equipment, vibratory pile drivers, and pile-extraction equipment. Equipment or activities typical of transient (single-impact) or low-rate, repeated impact vibration include impact pile drivers, and crack-and-seat equipment. Pile driving and blasting activities produce the highest levels of ground vibration and can result in structural damage to existing buildings.

Since individual project-specific information is not available at this time, potential short-term construction-related vibration impacts that may result from the Project can only be evaluated based on the typical construction activities associated with residential and mixed-use development. Potential construction source vibration levels were developed based on

methodologies, reference noise levels, and typical equipment usage and other operating factors documented and contained in the FTA's Transit Noise and Vibration Impact Assessment document and Caltrans' Transportation and Construction Vibration Guidance Manual.<sup>37,38</sup>

Reference levels are vibration emissions for specific equipment or activity types that are well-documented and for which their usage is common practice in the field of acoustics.

Future development as a result of the Project would occur in primarily urban and suburban settings where land may already be disturbed and, therefore, is not likely to require blasting, which is typically used to remove unwanted rock or earth. Standard construction equipment (e.g., bulldozers, trucks, jackhammers) generally does not cause vibration that could cause structural or cosmetic damage but may be felt by nearby receptors. Table 15-16 presents the typical types of equipment that could be used for the future development of housing sites.

**Table 15-16:  
Typical Construction Equipment Noise Levels**

Equipment	Peak Particle Velocity (in/sec) <sup>(A)</sup>			Velocity Decibels (VdB) <sup>(B)</sup>		
	25 feet	50 feet	100 feet	25 feet	50 feet	100 feet
Small bulldozer	0.003	0.001	0.001	58	49	40
Jackhammer	0.035	0.016	0.008	79	70	61
Rock Breaker	0.059	0.028	0.013	83	74	65
Loaded truck	0.076	0.035	0.017	86	77	68
Auger Drill Rig	0.089	0.042	0.019	87	78	69
Large bulldozer	0.089	0.042	0.019	87	78	69
Vibratory Roller	0.210	0.098	0.046	94	85	76
Impact Pile Driver (upper range)	1.518	0.708	0.330	112	103	94
Impact Pile Driver (typical)	0.644	0.300	0.140	104	95	86
Sonic Pile Driver (upper range)	0.734	0.42	0.160	105	96	87
Sonic Pile Driver (typical)	0.170	0.079	0.037	93	84	75

Sources: Caltrans 2020 and FTA 2018 (see notes 37 and 38)

(A) Estimated PPV calculated as:  $PPV(D) = PPV(ref) * (25/D)^{1.1}$  where  $PPV(D)$  = Estimated PPV at distance;  $PPV(ref)$  = Reference PPV at 25 ft;  $D$  = Distance from equipment to receiver; and  $n$  = ground attenuation rate (1.1 for dense compacted hard soils).

(B) Estimated  $L_v$  calculated as:  $L_v(D) = L_v(25 \text{ feet}) - 30 \log(D/25)$  where  $L_v(D)$  = estimated velocity level in decibels at distance,  $L_v(25 \text{ feet})$  = RMS velocity amplitude at 25 ft; and  $D$  = distance from equipment to receiver.

As shown in Table 15-16, specific vibration levels associated with typical construction equipment are highly dependent on the type of equipment used. For structural damage, the use of typical equipment during construction activities (e.g., bulldozer, jack hammer, trucks, etc.) would produce PPV levels up to 0.042 in/sec at 50 feet. These PPV values are well below

<sup>37</sup>U.S. Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Section 7.2.

<sup>38</sup>California Department of Transportation (Caltrans) 2020. Transportation and Construction Vibration Guidance Manual, Chapter 7.

Caltrans' guidelines standards for potential structural damage for modern residential and commercial and industrial structures (0.5 PPV for continuous vibration sources; see Table 15-8). Similarly, the use of specific vibration-generating equipment such as a vibratory roller or pile driver would not exceed Caltrans' structural damage criteria for modern commercial and industrial structures unless impact hammers were required to be used within approximately 30 feet of any building, which would be unlikely to occur given that the Marin County Code establishes minimum front, rear, and side yard requirements for single- and multi-family residential developments that range from 10 feet (side yard) to 25 feet (front and rear yard) depending on the underlying zoning classifications for the subject property.<sup>39</sup>

For human annoyance and interference responses, the use of typical equipment (e.g., bulldozer, jack hammer, trucks, etc.) during construction could produce vibration levels that exceed Caltrans' slightly perceptible vibration detection threshold for continuous sources (0.01 PPV, see Table 15-9), at distances up to 150 feet from work areas. For specific vibration-generating equipment such as a vibratory roller or pile driver, vibrations could be perceptible at greater distances (generally up to 400 feet from work areas); the use of impact hammers would have the potential to produce groundborne vibrations that may be perceptible at distances greater than 400 feet from work areas. The above vibration estimates represent potential vibration levels based on typical equipment operations and assume there is no change in elevation between work areas and receptor locations and no change in subsurface conditions that may affect vibration transmission through soil media and structures.

Neither the 2007 CWP nor the County Code include specific provisions to address temporary construction vibration levels; however, as described under Impact 15-3, the 2007 CWP provides protection from excessive noise levels, including construction noise, and includes policies that emphasize the reduction of noise impacts on residential and other sensitive land uses. Many of these policies would also serve to reduce potential construction vibration effects. For example, Policy NO-1.3 (Regulate Noise Generating Activities) requires new development projects to minimize construction noise exposure to neighboring properties, while Program NOI-1.i (Regulate Noise Sources) implements this policy by requiring projects to comply with the allowable construction hours established by the Marin County Code and, where significant construction noise impact may occur, to prepare a construction noise reduction plan that includes provisions for reducing construction noise levels. Pursuant to Section 6.70.030 (5) of the Marin County Code, construction activities and other similar work are permitted to occur during daytime hours only (see Table 15-12).

Although neither the 2007 CWP or the Marin County Code establish specific vibration standards for construction activities, 2007 CWP Goal NO-1, Policy NO-1.3, and Program NO-1.i establish the overall goal and intent of the County to protect noise sensitive uses by limiting construction noise levels and sets forth a requirement to assess and minimize construction noise levels as part of the development review process. Furthermore, Marin County Code Section Sections 6.70.030(5) limits the allowable hours of construction and the time period when loud noise-generating construction equipment may be maintained, operated, or serviced to daytime hours

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<sup>39</sup>A 10-foot side yard setback on either side of the shared property line would result in a minimum 20-foot setback between building facades. Although project-specific construction means and methods are not known, it is unlikely that more than one pile would be driven within 30 feet of an existing building given the need to install piles in a manner that spreads the building load evenly across piles. In addition, piles and other substantial structural load bearing elements are typically near the building perimeter but farther from the property line due to exterior framing and building skin elements.

only. These policies, programs, and enforceable code requirements would protect existing and future residents from potential construction vibration levels.

As discussed above, the future development of potential housing sites is not anticipated to have the potential to result in structural damage to buildings. With regards to annoyance, although typical construction activities may generate perceptible ground-borne vibration levels at structures within approximately 150 feet of work areas, these levels would not be excessive because they would be intermittent (would not occur every day), limited in duration (equipment would move throughout work areas and not operate in the same location for a prolonged amount of time), and occur during the daytime only (when receptors would not be sleeping and, therefore, are considered less sensitive to vibration levels). In addition, the policies, programs, and enforceable code requirements contained in the 2007 CWP and Marin County Code for addressing construction noise levels would also protect existing and future residents from potential construction vibration levels. For these reasons, the proposed Project would not result in a substantial temporary increase in noise levels. This impact would be ***less-than-significant***.

#### *Long-Term Ground-borne Vibration Levels*

The Project could result in the development of new residential and mixed-use development projects on potential housing sites, which would not result in the development of new stationary or mobile vibration sources. ***No impact*** would occur.

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**Impact 15-5: Exposure to Airport-related Noise Levels.** [Threshold of Significance (c)] As described in Section 15.1.6, Marin County contains several public and private air travel facilities, including Gness Field, San Rafael Airport, and helicopter facilities in Sausalito and San Rafael. The proposed Housing Element Update would authorize new housing developments in the vicinity these airport facilities, as described below.<sup>40</sup>

- Gness Field Airport: The Project includes one housing site that may be within or immediately adjacent to the 55 dB contour zone identified in the Gness Field ALUP. This property is located on the west side of U.S. 101 and Redwood Highway, approximately 1,940 feet from the airport runway centerline. The Housing Element Update also includes two other sites within two miles of Gness Field. These properties are located at 654 Atherton Avenue and 800 Atherton Avenue. In total, the Project includes three sites that are located within two miles of Gness Field.
- San Rafael Airport: The Project does not include any housing sites that are within a defined airport noise contour for San Rafael Airport. The Project does include eight sites that are within two miles of this facility, including sites adjacent to Marinwood Avenue, on the St. Vincent's property, along San Pedro Road, and west of Los Ranchitos Road.
- Commodore Center Heliport: The Project includes one housing site that is within the 55 dB noise contour zone identified for the Commodore Center Heliport (formerly Richardson Bay Heliport). This property is located at 260 Redwood Highway Frontage

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<sup>40</sup>The Project includes both the Housing Element Update and the Safety Element Update; however, only the Housing Element Update would have the potential to place receptors/development within airport noise contour zones. The Safety Element Update does not authorize housing development and would not result in the placement of housing near an airport.

Road, approximately 390 feet northwest of the existing helicopter land pads at this facility. The Project also includes 18 other sites within two miles of the Commodore Center Heliport, including sites adjacent to Thomas Drive, Bay Vista Drive, Redwood Highway Frontage Road/Belvedere Drive and Belvedere Place, Seminary Drive, Shoreline Highway, Donahue Street, and Drake Avenue.

- San Rafael Heliport: Noise contours have not been prepared for this facility; however, the San Rafael General Plan indicates this facility is located in a developed industrial area and does not impact noise-sensitive land uses in the City.<sup>41</sup> The Project includes one housing site located approximately 1,880 feet west of this heliport (adjacent to San Quentin State Prison). This is the only housing site within two miles of this facility.

Although the Project includes housing sites that are in or near defined airport-related noise contour zones, or otherwise located within two miles of a public or private airport facility, it would not expose people residing or working at housing sites to excessive airport-related noise levels. As discussed above, the 2007 CWP provides protection from excessive noise levels, ensures that new land uses and transportation noise, including airport noise, do not create noise levels that impair human health or quality of life, and includes policies that emphasize the reduction of noise impacts on residential and other sensitive land uses. Specifically, Policy NO-1.1 (Limit Noise from New Development) require new development projects to meet acceptable noise levels, while Programs NOI-1.e (Coordinate with Public Agencies), Program NOI-1.f (review projects Near Gness Field), and NOI-1.g (Plan for New Helipad) address potential aircraft noise levels and enforce consistency with applicable airport noise criteria. Furthermore, Policies TR-1.7 (Direct Aviation Uses to Appropriate Locations) and Implementation Program TR-1.p (Limit Aviation Uses) also limit use of air facilities and prevent excessive operational noise from aircraft.

2007 CWP Program NOI-1.f requires that development proposals within a two-mile area of Gness Field are reviewed for consistency with the noise criteria in the 2007 CWP and ALUP. As discussed in Section 15.2.3.1, the Gness Field ALUP contains policies for ensuring that land uses do not conflict with airport operations at Gness Field. The ALUP does not allow residential development within the 60 dB contour, and places restrictions on residential development within the 55 dB contour. This includes a requirement that any proposed new residential development within the 55 dB CNEL noise contour conducts an acoustical study and implements the study's recommendations regarding sound insulation. Development of housing sites within Gness Field airport noise contour zones would be subject to review for consistency with these policies.

As described above, the policies and programs in the 2007 CWP and the Gness Field ALUP would protect existing and future residents from excessive noise levels by ensuring new development projects located, planned, and designed to minimize and avoid excessive airport related noise levels. For these reasons, the proposed Project would not expose existing or future noise sensitive land uses to excessive airport-related noise levels. This impact would be ***less-than-significant***.

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<sup>41</sup>City of San Rafael, 2021. San Rafael General Plan 2040, p. 9-6. Available at: <https://storage.googleapis.com/proudcity/sanrafaelca/uploads/2021/09/FullDocument-Adopted080221.pdf>.



**Other Planning Considerations (Potential Effects of the Environment on the Project).**

this section discusses the existing noise environment and the degree to which the existing environment is compatible and consistent with the County's planning goals, policies, and standards for the development of new housing sites. This section of the EIR does not identify CEQA impacts and is provided for informational purposes only.

*Countywide Plan Noise and Land Use Compatibility*

As explained in Section 15.2.3.4, the 2007 CWP establishes land use compatibility standards with regard to determining the appropriate type of new development in relation to the existing transportation noise environment.

- **Traffic Noise and Land Use Compatibility.** The existing ambient noise levels near housing sites vary depending on location. As described in Section 15.1.6.1, daily noise exposure levels (DNL) measured near the SMART commuter corridor and along Lucas Valley Road were both below 60 DNL, while measured hourly average daytime noise levels were generally lowest in low density areas and highest near major roads. In addition, as shown in Table 15-4, existing 2019 traffic noise levels were generally within the County's acceptable noise levels of 60 DNL for single-family residential and 65 DNL for multi-family residential. The exceptions to this were segments of Lucas Valley Road (60.7 DNL to 62.9 DNL between Mount McKinley Road and Huckleberry Road), Petaluma Point Reyes Road (61.2 DNL from Nicasio Valley Road to Shoreline Highway), SR 1 (62.8 DNL between the north County limit and Tomales Petaluma Road), and SR-37 (above 75 DNL), SR-131 (above 73 DNL), I-580 (approximately 80 DNL), and U.S. 101 (approximately 80 DNL).

As discussed under Impact 15-1, the 2007 CWP (Goal NO-1) establishes the County's intent to provide protection from excessive noise levels and ensure that transportation activities do not create noise levels that impair human health or quality of life. Specifically, Policy NO-1.1 (Limit Noise from New Development) requires new development projects to be designed to meet acceptable noise levels established by the 2007 CWP, including a 60 DNL standard for single-family residential land uses and a 65 DNL standard for multi-family residential land uses (see Table 15-10), and Policy NO-1.2 (Minimize Transportation Noise) require transportation activities also meet acceptable noise levels. The 2007 CWP implements these policies through programs that enforce allowable noise levels and require project-specific noise mitigation if noise impacts occur, including Programs NOI-1.a (Enforce Allowable Noise Level), NOI-1.b (Comply with Acceptable Noise Levels), and NOI-1.c (Require Project-Specific Noise Mitigation).

In addition, as described in Section 15.2.2.1 and 15.2.2.2, the California Building Standards Code establishes a 45 DNL standard for habitable rooms, and the California Green Building Standards Code establishes additional standards for interior noise levels (50 dBA  $L_{eq}$ ) that may apply if a building is located within a 65 DNL noise contour of an airport, freeway, railroad, industrial source, etc. or otherwise exposed to a noise level of 65 dBA on an hourly  $L_{eq}$  basis, which would likely be the case for housing sites directly adjacent to major roads and the SMART corridor. Typically, new construction is capable of providing between 10 dBA to 15 dBA of exterior-to-interior noise reduction with windows open and between 20 dBA to 30 dBA of exterior-to-interior noise reduction with

windows closed.<sup>42</sup> Therefore, exterior noise levels between 55 DNL to 60 DNL (with windows open) and between 65 DNL to 75 DNL (with windows closed) may require the incorporation of specific site design (e.g., setbacks), noise control (e.g., barriers or berms to block noise), and/or building attenuation measures (e.g., specific exterior wall assemblies, windows and doors with high STC ratings, etc.) to ensure outdoor and interior noise levels meet applicable CWP guidelines and State building code standards. The actual level of exterior noise and exterior to interior noise attenuation required for each individual housing site project would depend on factors such as the distance from major noise sources, updated traffic noise modeling results or ambient noise measurements that capture actual development patterns over time, and the presence of any intervening shielding or other attenuating factors that may reduce noise levels in specific parts of developed housing sites.

As discussed above, the Project includes housing sites that may be exposed to traffic noise levels above acceptable levels; however, the 2007 CWP establishes the County's intent to provide protection from excessive noise levels and ensure that transportation activities do not create noise levels that impair human health or quality of life. It also includes policies and programs to protect existing and future residents from excessive noise levels by ensuring new development projects meet County noise standards through appropriate, project-specific evaluation and design considerations. For these reasons, the Project would not expose existing or future noise sensitive land uses to unacceptable noise levels.

- **SMART Rail Noise Exposure.** The proposed Project does not authorize, nor does it increase, any SMART freight or commuter rail operation because such operations are outside the jurisdictional authority of the County. Nonetheless, as described in Section 15.1.6.3, both SMART and the California State Rail Plan anticipate that freight and commuter train service will increase by 2040, and the proposed Housing Element Update could result in changes in land use type and or intensity near SMART rail corridors.

As shown in Table 15-15, rail activity on the SMART commuter corridor is predicted to generate noise levels above 60 DNL up to 199 feet to 397 feet from the center of the track under existing 2019 and future 2040 service conditions. A review of the housing sites evaluated in this EIR indicates certain potential sites along the eastern side of Woodland Avenue, the western side of Los Ranchitos Avenue, and at the St. Vincent's property (which is bisected by the commuter rail corridor) would be located within 400 feet of the commuter rail corridor and, therefore, could be potentially exposed to rail noise levels above 60 DNL.

In addition, as shown in Table 15-15, rail activity on the SMART Brazos Branch Line is predicted to generate noise levels above 60 DNL up to 126 feet to 315 feet from the center of the track under existing 2019 and future 2040 service conditions. A review of the housing sites evaluated in this EIR indicates certain potential sites along the northern

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<sup>42</sup>U.S. Department of Housing and Urban Development, 2009. [HUD Noise Guidebook](#) and [HUD Noise Guidebook, Chapter 4 Supplement: Sound Transmission Class Guidance](#).

side of Harbor Drive would be located within 315 feet of the commuter rail corridor and, therefore, could be potentially exposed to rail noise levels above 60 DNL.<sup>43</sup>

As discussed under Impact 15-1, the 2007 CWP provides protection from excessive noise levels, ensures that transportation activities, including rail, do not create noise levels that impair human health or quality of life, and includes policies that emphasize the reduction of transportation-related noise impacts on residential and other sensitive land uses. Specifically, Policy NO-1.1 (Limit Noise from New Development) and Policy NO-1.2 (Minimize Transportation Noise) require new development projects and transportation activities to meet acceptable noise levels, while Programs NOI-1.a (Enforce Allowable Noise Level), NOI-1.b (Comply with Acceptable Noise Levels), and NOI-1.c (Require Project-Specific Noise Mitigation) implement these policies, enforce allowable noise levels, and require project-specific noise mitigation if noise impacts occur. In addition, Program NOI-1.h (Anticipate Additional Rail Noise), requires the County to incorporate noise contour information into the 2007 CWP and work with SMART to determine appropriate mitigation measures necessary to meet acceptable noise levels. These policies and programs would protect residents from excessive rail-related noise levels and ensure new development projects meet County noise standards through appropriate, project-specific evaluation and design considerations. For these reasons, the proposed Project would not expose new development to unacceptable rail noise levels.

#### *Exposure to SMART Rail Vibration*

The Project includes several housing sites directly adjacent or in close proximity to the SMART commuter corridor, including sites along the western side of Los Ranchitos Avenue (approximately 100 feet from the centerline of the SMART commuter corridor), a site along the eastern side of Woodland Avenue (approximately 40 feet from the rail centerline), and the St. Vincent's property, which is bisected by the commuter rail line. With regards to vibration impacts on new development near railroads, human disturbance is the primary concern. It is extremely rare for vibration levels from trains passing to result in structural damage to buildings.

The FTA's Transit Noise and Vibration Impact Assessment document provides recommended ground-borne vibration criteria for general environmental assessments. The vibration criteria vary according to the sensitivity of the land use and the frequency of vibration events (i.e., number of trains passing by the sensitive land use). As shown in Table 15-15, the SMART commuter corridor currently carries up to approximately 36 commuter trains and one freight train per day. This level of commuter service would be considered an occasional event according to FTA guidance. For residential land uses, the impact criteria for occasional events is 75 VdB (see Table 15-7). The level of freight service would be considered infrequent. For residential land uses the impact criteria for infrequent events is 80 VdB (see Table 15-7).

The FTA's guidance document contains generalized ground surface vibration curves derived from vibration measurements of transit systems in North America.<sup>44</sup> Based on these vibration prediction curves, proposed residential development within approximately 40 feet of light rail

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<sup>43</sup>Some candidate sites along Woodland Avenue and Redwood Boulevard would be located within 400 feet of the rail corridor but would be adjacent to a major roadway or highway that is present between the site and the rail corridor. In these locations, the roadway is likely to be the predominant contributor to the ambient noise environment.

<sup>44</sup>U.S. Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Figure 6-4.

service (traveling at 50 miles per hour) and 80 feet of freight rail service (traveling at 50 miles per hour) could be exposed to vibration levels that exceed the FTA's recommended threshold of 75 VdB for residences exposed to occasional vibration events and 80 Vdb for residences exposed to infrequent vibration events.<sup>45</sup> The actual vibration levels perceived by receptors adjacent to the SMART corridor would be contingent on several factors, including the type of locomotive power (e.g., diesel locomotive or diesel multiple unit), the type of train using the line (e.g., freight or commuter), the speed of the vehicle, and actual subsurface conditions between the rail line and the receptor.

The SMART commuter corridor primarily consists of a single track, generally centered within the right-of-way, with an occasional second track for passing sidings. The SMART right-of-way varies from 30 feet to over 100 feet in width, with the majority ranging from 60 to 80 feet in width.<sup>46</sup> Thus, for the typical right-of-way width, a housing site would be between 15 to 50 feet from the rail centerline. In addition, the Marin County Code establishes minimum front, rear, and side yard requirements for single- and multi-family residential developments that range from 10 feet (side yard) to 25 feet (front and rear yard) depending on the underlying zoning classifications for the subject property. This means that buildings on the potential housing sites on Woodland Avenue and the St. Vincent's property would be 25 feet to 60 feet from the rail centerline with side yard setbacks and between 40 feet to 75 feet from the rail centerline with rear yard setbacks.

As described above, development on the Woodland and St. Vincent's housing sites could result in development within 40 feet (light rail) to 80 feet (freight rail) of the SMART commuter corridor and, therefore, could be exposed to vibration levels that exceed FTA criteria. As part of the 2007 CWP, the County requires developers to evaluate projects against the FTA's vibration criteria and demonstrate that potential vibration levels would not exceed FTA criteria.<sup>47</sup> For this reason, the proposed Project would not expose new development to unacceptable rail noise levels.

### **Cumulative Noise and Vibration Impacts**

For purposes of this cumulative noise and vibration analysis, the geographic context is limited to the extent of potential noise impacts caused by the proposed Project that could combine with other relevant cumulative developments. Although construction and stationary source noise may theoretically be audible far from the source, in practice ambient noise from wind, roadway traffic, and other land uses is substantially louder than equipment operating hundreds or thousands of feet away. Therefore, the geographic context is limited to the area within approximately 1,000 feet of individual housing sites and the roadways used to travel to and from these sites.

The Project would result in long term increase in vehicle trips and traffic-related noise levels (Impact 15-1). These vehicle trips would contribute to a 1 dB change in modeled traffic noise levels in areas already affected by high noise levels that exceed the County's guidelines for acceptable noise levels from transportation noise. The 2007 CWP and the County's Climate Action Plan include measures to reduce vehicle miles travelled from development projects, as

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<sup>45</sup>These vibration estimates are consistent with estimated contained in SMART's 2014 Downtown San Rafael to Larkspur Extension Environmental Assessment (p. 3.10-25 to 3.10-26), available at: [https://www.sonomamarintrain.org/sites/default/files/Document%20Library/SMART\\_EA\\_Dec19\\_508c\\_0.pdf](https://www.sonomamarintrain.org/sites/default/files/Document%20Library/SMART_EA_Dec19_508c_0.pdf).

<sup>46</sup>SMART, 2014 Downtown San Rafael to Larkspur Extension Environmental Assessment, p. 2-24. See note 43.

<sup>47</sup>Marin County, 2013. Marin County Housing Element Supplement to the 2007 Countywide Plan EIR Final Supplemental Environmental Impact Report, pp. 389 to 390.

does Mitigation Measure 18-4; however, the specific roadway segments where this mitigation would reduce vehicle trips and traffic-related noise is not known; and, therefore, no noise reduction has been taken for VMT and trip reduction measures required by the 2007 CWP, Climate Action Plan, or Mitigation Measure 18-4. Because a reduction in vehicle trips on specific, impacted roadway segments cannot be guaranteed, and future traffic noise levels would increase by 3 dB or more and/or potentially expose noise-sensitive land uses to normally unacceptable noise levels, the Project would result in a ***cumulatively considerable contribution to a significant and unavoidable cumulative traffic noise impact***. There is no feasible mitigation available to avoid or reduce this cumulative impact.

The Project could also result in operational noise from the development of individual housing sites (Impact 15-2); however, the Project is not anticipated to result in land uses that involve substantial on-site noise generating sources or activities. The development of housing sites as well other potential projects in the County would be subject to 2007 CWP policies and County Code regulations and policies regarding on-site operational noise that would protect existing and future residents from potential substantial, permanent increases in ambient noise levels associated with stationary and other noise sources. For these reasons, the proposed Project ***would not make a cumulatively considerable contribution to cumulative noise impacts at on- or off-site property lines or receptor locations***.

The Project could result in construction noise and vibration as individual development projects are constructed over time (Impacts 15-3 and 15-4). Construction noise and vibration from the development of housing sites could combine with other construction projects (within 1,000 feet of the housing site). Each development project would be subject to 2007 CWP policies and County Code regulations and policies regarding construction noise and vibration (see Chapter 15) that would protect existing and future residents from potential substantial, temporary increases in ambient noise levels associated with construction activities. For these reasons, the proposed Project ***would not make a cumulatively considerable contribution to cumulative construction noise or vibration impacts at on- or off-site receptor locations near housing sites***.

The Project does not propose or support any large vibration-inducing equipment or land use activities and would not result in excessive ground-borne vibration levels that have the potential to combine with vibration levels from other project within or outside of the Project Area (Impact 15-4). ***No cumulative operational vibration impact would occur***.

The Project would not expose people living or working at housing sites to excessive airport-related noise levels (Impact 15-5). This impact is Project-specific and would not combine with any other project. ***No cumulative impact would occur***.

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## 16. POPULATION AND HOUSING

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Population and Housing. <i>Would the project:</i></b>				
<i>a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?</i>			X	
<i>b) Displace substantial numbers of existing people or housing, especially affordable housing, necessitating the construction of replacement housing elsewhere?</i>			X	

This EIR chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts.

### 16.1 ENVIRONMENTAL SETTING

#### 16.1.1 Population

In 2020, the population of the unincorporated area of Marin County was 68,697, which is approximately 26.4 percent of the total population in the County. As shown in Table 16-1, the population of the unincorporated area increased by 1.9 percent from 67,427 to 68,697 between 2010 and 2020. In comparison, during the same period the County as a whole grew by approximately 3.2 percent. According to the Association of Bay Area Governments (ABAG), Marin County's population is expected to grow to 282,670 by 2040, with the population of the unincorporated area increasing to 75,190. This represents an approximate 12 percent increase countywide over the 30-year period from 2010 to 2040, and an approximate 11.5 percent increase for the unincorporated area.

<sup>1</sup>State CEQA Guidelines, Appendix G, item XIV (a and b).

**Table 16-1:  
 Estimated Population Growth, 2010-2040 – Marin County**

Year	Marin County	Unincorporated Marin	Unincorporated Population Percent of Total
2010 <sup>(a)</sup>	252,409	67,427	26.7
2020 <sup>(a)</sup>	260,388	68,697	26.4
2030 Projections <sup>(b)</sup>	274,530	73,490	26.8
2040 Projections <sup>(b)</sup>	282,670	75,190	26.6

Sources: (a) State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties, and the State, 2010-2020; (b) Association of Bay Area Governments/Metropolitan Transportation Commission, Projections 2040, November 2018.

### 16.1.2 Housing

**A. Housing Issues.** The County of Marin last updated its housing element in 2012, covering the 2015 to 2023 planning period. The 2015-2023 Housing Element focused on low vacancy rates, escalating housing prices and rents, and the overall demand for housing and pressure for growth. At a September 22, 2021 Community Workshop for the proposed 2023-2031 Housing Element Update, the following items of concern were identified:

- housing costs are too expensive for most incomes;
- single parents, seniors, people with extraneous circumstances need more support;
- over-crowdedness and unit conditions not well maintained;
- experiences of discrimination and need for racial and income equity;
- housing (in general) and affordable housing in short supply;
- access to evacuation routes and resources;
- infrastructure such as access to water, public transportation, power and cell service;
- limitations on septic systems;
- traffic; and
- hazards and risks related to earthquakes, flooding, fires, sea level rise, etc.

**B. Jobs-Housing Balance.** The jobs-housing balance is an indicator of fiscal, social, and environmental health and can be expressed as a ratio of the number of jobs to the number of households. This shows whether a jurisdiction has a surplus or deficit of jobs compared to its population and housing supply. A jobs-housing balance greater than 1.0 could result in a shortage of affordable housing, with workers unable to reside near their place of employment and therefore having to commute from more distant areas where affordable housing is available. As shown in Table 16-2, data from ABAG indicate that the unincorporated County’s jobs-housing ratio in 2010 was 0.70 (which means that the County had 0.70 jobs for every household). By 2040, the unincorporated County will have an estimated 21,650 jobs and 28,425 households. Using this data, the unincorporated County’s projected 2040 jobs-housing ratio would be 0.76 jobs for every household (21,650 jobs divided by 28,425 households).



**Table 16-2:  
Estimated Housing and Job Growth, 2010-2040 – Marin County**

	2010	2020	2030	2040
<b>Housing Units</b>				
Countywide Total	103,210	108,195	111,065	111,585
Unincorporated Area	26,195	27,960	28,500	28,425
<b>Jobs</b>				
Unincorporated Area	18,410	20,690	21,315	21,650
Jobs-to-Housing Ratio (Unincorporated Area)	0.70	0.74	0.75	0.76

Source: Association of Bay Area Governments/Metropolitan Transportation Commission, Projections 2040, November 2018.

**C. Affordable Housing.** Marin County made a commitment to providing affordable housing in its 2015-2023 Housing Element, which was designed to achieve an adequate supply of decent, safe, and affordable housing for the County’s workforce, residents, and special needs populations. The proposed 2023-2031 Housing Element Update also includes policies and programs in support of affordable housing. As a matter of State planning law, every housing element must demonstrate that the local jurisdiction has made adequate provisions to support development of housing at various income levels (including extremely low, very-low, moderate, and above-moderate) to meet its “fair share” of the existing and projected regional housing needs (the Regional Housing Needs Allocation, or “RHNA,” discussed in more detail below). The RHNA numbers establish goals to guide planning and development, although the actual development and construction of housing units would generally not be carried out by cities or the County. The RHNA numbers establish a method for determining whether the County is allocating adequate sites for housing development.

### 16.1.3 Candidate Housing Sites

As discussed in Chapter 3, Project Description, the Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Section 3.4.2(c) in Chapter 3, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the County evaluated a larger number of “candidate housing sites,” which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts.

These sites are generally located along the west side of the county (the Coastal Corridor) from Tomales south to Stinson Beach; along the east side from the Novato area south to Marin City (the Baylands and City-Centered Corridors); around Nicasio; in the Lucas Valley-Marino area; and in the Lagunitas-Forest Knolls/San Geronimo/Woodacre area (the Inland Rural Corridor). Many of the proposed sites are in already-developed areas identified as being able to accommodate additional housing construction. For some sites, this would entail a zoning and land use designation change to allow the addition of housing, or in other cases (such as a larger parcel) a subdivision of the site.

## 16.2 REGULATORY SETTING

### 16.2.1 Federal

**U.S. Department of Housing and Urban Development (HUD).** HUD oversees the Federal Housing Administration (FHA), the largest mortgage insurer in the world; regulates housing industry business; and provides Project-Based Rental Assistance and other rental assistance programs supporting low and very-low income households.

### 16.2.2 State Laws

**California Department of Housing and Community Development (HCD).** HCD enforces standards for housing construction, maintenance of farmworker housing, and manufactured/factory-built homes. HCD also proposes amendments to California's residential building standards for new construction to the California Building Standards Commission and helps train local government to better understand new requirements. HCD works with regional governments to determine their housing needs and reviews every city and county's housing element of the general plan to determine compliance with State law.

**Housing Element Law (California Government Code, Section 65580 et seq.).** The State has established detailed legal requirements for a General Plan Update (GPU) Housing Element. State Law requires each city and county to prepare and maintain a current Housing Element as part of the community's GPU to attain a Statewide Goal of providing "decent housing and a suitable living environment for every California family." (Government Code Section 65580(a)). Under State law, Housing Elements generally must be updated every five years and reviewed by the California Department of Housing and Community Development (HCD). As described in Section 16.2.4, Regional Housing Needs Allocation, below, the State of California requires every city and county to accommodate its fair share of regional growth through a process called the Regional Housing Needs Allocation (RHNA). The Association of Bay Area Governments (ABAG) administers the RHNA process in the San Francisco Bay Area. All cities and counties are required to demonstrate how they will accommodate these unit requirements, as they are distributed among each of four income categories.

**California Housing Accountability Act.** The California Housing Accountability Act (Government Code Section 65589.5) enacted in 2017 ensures that local governments may not reject housing development projects (including emergency shelters) that contribute to meeting or exceeding its share of the regional housing need or otherwise make housing projects infeasible.

**Housing Density Bonus Law.** California Government Code sections 65915 through 65918 provide for an increase in the amount of housing allowed under a given land use designation or zoning ordinance (i.e., a "density bonus") and other incentives or concessions such as waivers or reductions of development standards in exchange for building affordable housing or donating land for the building of affordable housing, including senior housing.

**Senate Bill 35 (Affordable Housing; Streamlining).** Senate Bill 35 (Government Code Sections 65400 and 65582.1) provides for streamlined, ministerial approval of housing development proposals to facilitate and expedite the approval and construction of affordable housing. Applicable housing development proposals must meet standards related to multi-family residential use, urban location, inclusion of below-market rate units, and consistency with

objective zoning standards and objective design review standards in effect at the time the proposal is submitted.

**AB 686 (Affirmatively Furthering Fair Housing).** Assembly Bill 686 (Government Code Section 8899.50, 65583(c)(5), 65583(c)(10), and 65583.2(a)) requires public agencies (as defined by the statute) to administer its housing and community development programs and activities in a manner that affirmatively furthers fair housing. In particular, housing elements are required to contain an assessment of fair housing within the jurisdiction and a program that sets forth a schedule of actions to be undertaken by the local jurisdiction during the planning period to implement these policies and achieve housing element goals and objectives. The bill requires an inventory of land suitable and available for development, and an inventory of identified sites that can be developed for housing within the planning period sufficient to provide for the jurisdiction's share of the regional housing need for all income levels.

**SB 9 (Housing Development; Approvals).** Senate Bill 9 (Government Code Sections 66452.6, 65852.21, and 66411.7) provides for ministerial approval of a housing development of no more than two units in a single-family zone (duplex) or the subdivision of a parcel zoned for residential use into two parcels (lot split), or both. This law allows for development of up to four housing units where only one would have been permitted without further discretionary review. In addition, while SB 9 lot splits in the coastal zone are still subject to the Coastal Act, the local agency is not required to hold a public hearing for SB 9 lot splits. (For further details, please see the Coastal Commission's SB 9 Guidance).<sup>2</sup> Some exceptions to the application of SB 9 include parcels in a historic district and demolition of existing affordable housing. Other restrictions would apply depending on specific environmental resources and/or hazard/safety considerations.

### 16.2.3 Local Regulations

**2007 Marin Countywide Plan.** The Marin Countywide Plan (CWP) addresses population and housing issues. Applicable 2007 CWP policies include:

#### **Built Environment Element – Community Development policies**

- Policy CD-2.1: Provide a Mix of Housing. The range of housing types, sizes, and prices should accommodate workers employed in Marin County. This includes rental units affordable to lower-wage earners and housing that meets the needs of families, seniors, disabled persons, and homeless individuals and families.
- Policy CD-2.3: Establish a Housing Overlay Designation. The Housing Overlay Designation (HOD) is established, as shown on Maps 3-2a and 3-2b. The purpose of the HOD is to encourage construction of units to meet the need for workforce housing, especially for very low- and low-income households, and for special needs housing, in the City-Centered Corridor close to transit, employment, and/or public services. Sites for the HOD include reuse of existing shopping centers or other underutilized sites. Development on sites designated as both mixed-use and as suggested HOD sites shall be developed pursuant to the HOD Policy and Program and not per mixed-use land

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<sup>2</sup>California Coastal Commission, memo to Planning Directors of Coastal Cities and Counties, "Implementation of New SB 9 Housing Laws in Sea Level Rise Vulnerable Areas," January 21, 2022, <https://documents.coastal.ca.gov/assets/rflg/SB9-Memo.pdf>, accessed 10/5/22.

designation criteria. Each square foot of market-rate HOD housing shall be offset by an equal reduction in the square footage of the permissible commercial development. Up to 658 housing units may be approved within the HOD, subject to a discretionary approval process.

The criteria used in establishing the Housing Overlay Designation include the following:

Designated by the Countywide Plan as Multifamily (MF), General Commercial (GC), Neighborhood Commercial (NC), Office Commercial (OC), Recreation Commercial (RC), or Public Facility (PF). Located within

- the unincorporated portion of the City-Centered Corridor;
- one-half mile of a transit node or route with daily, regularly scheduled service; and
- one mile of a medical facility, library, post office, or commercial center. The area to be developed
- does not exceed an average 20% slope and is not within the Ridge and Upland Greenbelt;
- is not within a Wetlands Conservation Area or Streamside Conservation Area;
- is not a park or public open space area; and
- is not primarily located within the 100-year flood plain.

The County will engage in discussions with cities and towns within Marin County regarding the possibility of locating residential units otherwise allocated to the HOD within these cities and towns, subject to the criteria described above.

Based on the above, the potential HOD suggested sites and unit allocations by traffic impact areas are listed in Figure 3-3 and shown in Map 3-2c [of the Built Environment Element].

- Policy CD-2.4: Offer a Range of Jobs. Encourage economic development that provides jobs for Marin residents at all income levels, especially in areas with low jobs-to-housing ratios.
- Policy CD-2.5: Locate Housing Near Activity Centers. Provide housing near jobs, transit routes, schools, shopping areas, and recreation to discourage long commutes and lessen traffic congestion.
- Policy CD-2.6: Focus Intensive Development at Nodes. Concentrate commercial and higher density residential development in areas with high transit accessibility and service capacity, such as the central business districts of the City-Centered Corridor. Discourage strip development along roadways and big box retailers unless specifically authorized in an approved community, master, or specific plan.
- Policy CD-2.7: Enhance Existing Commercial and Industrial Areas and Businesses. Enhance functioning commercial areas, especially historic downtowns, so that they continue to define community identity, while also encouraging mixed-use development.
- Policy CD-2.8: Limit Development in Resource or Hazard Areas. Discourage development in areas with high natural resource value or threats to life or property, and restrict development in such areas to minimize adverse impacts.

### **Built Environment Element – Community Design policies**

- Policy DES-3.1: Promote Infill. Encourage the development of vacant and underutilized parcels consistent with neighborhood character.

**Built Environment Element – Planning Areas policies (these policies pertain specifically to the St. Vincent’s and Silveira Planning Area)**

- Policy SV-5.1: Encourage Affordable Housing. Within the maximum number of units permitted, encourage the provision of affordable units above and beyond minimum inclusionary requirements through a variety of mechanisms, including density bonuses, financing assistance, grants, and partnerships with affordable housing providers.
- Policy SV-5.2: Encourage Senior Housing. Anticipate the aging of Marin by creating a vibrant senior community serving a range of housing and income, from very low-income to market rate supportive care needs.

**Marin County Housing Element 2015-2023.** The 2015-2023 Housing Element establishes policies addressing the development of housing within the County, including meeting the County’s Regional Housing Need Allocation, protecting and expanding the supply and residential capacity of housing sites, particularly for lower income households, expanding housing opportunities for special needs groups, and protecting and enhancing current housing to ensure existing affordable housing remains affordable, among other policies.

**Marin County Development Code (Title 22 of the Marin County Code).** County Code Chapter 22.22 (Affordable Housing Regulations) establishes procedures and requirements for achieving County affordable housing goals by requiring new developments to provide affordable housing units, dedicate land, and/or pay affordable housing fees. In addition, an affordable housing plan shall be submitted as part of a development project application, except single-family dwellings subject to the Affordable Housing Impact Fee. County Code Chapter 22.24 (Affordable Housing Incentives) establishes standards and procedures for providing density bonuses and other incentives and concessions as required by State law (Government Code Section 65915) and County incentives for providing affordable housing. In addition to the increase in units allowed on a site by a density bonus, other incentives and concessions could include a reduction in the site development standards such as height, setback, coverage, floor area, and/or parking requirements which would result in identifiable and actual cost reductions and provide for affordable housing costs. These sections implement existing Housing Element programs aimed at meeting the County’s housing needs, including standards applying to agricultural worker housing, homeless shelters, accessory dwelling units, seniors, individuals with disabilities, and other housing needs.

**Interim Housing Ordinances.** The Marin County Board of Supervisors passed interim ordinances to implement State Senate Bills (SB) 35 and 9. SB 35 is intended to streamline the review of larger developments, such as apartment buildings that would provide a substantial amount of affordable housing, because no discretionary review is allowable as long as projects meet the mandates of the law. SB 9 generally encourages housing development by removing a local jurisdiction’s authority to require discretionary review for qualifying one- and two-unit projects and prohibits use of units created under its provisions as short-term rentals. Both ordinances include standards for floor-area ratios, maximum heights, minimum setbacks, and protections for streams and wetlands. In addition, both State laws are only applicable in urban and suburban areas; as to SB 9, the Coastal Act still applies.

### 16.2.4 Regional Housing Needs Allocation

The State of California requires every city and county to accommodate its fair share of regional growth through a process called the Regional Housing Needs Allocation (RHNA). The Association of Bay Area Governments (ABAG) administers the RHNA process in the San Francisco Bay Area. ABAG allocates housing needs to each of the nine counties and 100+ cities in the region, identifying the number of units that must be accommodated in each of four income categories. Upon receiving its RHNA from ABAG, each local government must update the Housing Element of its General Plan to show how it plans to meet the housing needs in its community.<sup>3</sup>

Table 16-3 shows the current RHNA assignment for the unincorporated areas of Marin County for the period from 2023 to 2031. As the table shows, the RHNA assignment calls for the County to provide for development of a total of 3,569 housing units during the 2023-2031 period, consisting of 1,100 units for very-low income households, 634 units for low income households, 512 units for moderate income households, and 1,323 units for above-moderate income households.

**Table 16-3:  
Regional Housing Needs Allocation (RHNA) for Marin County  
Unincorporated Areas, 2023-2031**

<b>Income Category<sup>1</sup></b>	<b>Number of Housing Units</b>
Very-Low Income	1,100
Low Income	634
Moderate Income	512
Above-Moderate Income	1,323
<b>Total:</b>	<b>3,569</b>

Source: ABAG, Final Regional Housing Needs Allocation Plan: San Francisco Bay Area, 2023-2031 (viewed at [https://abag.ca.gov/sites/default/files/documents/2022-04/Final\\_RHNA\\_Methodology\\_Report\\_2023-2031\\_March2022\\_Update.pdf](https://abag.ca.gov/sites/default/files/documents/2022-04/Final_RHNA_Methodology_Report_2023-2031_March2022_Update.pdf)), adopted December 2021, Updated March 2022, p. 26.

<sup>1</sup> Income categories are defined as follows:  
 Very-low income = less than 50 percent of area median income  
 Low income = between 50 and 80 percent of area median income  
 Moderate income = between 80 and 120 percent of area median income  
 Above-moderate income = greater than 120 percent of area median income

The 2023-2031 Housing Element Update proposes to meet the County’s current RHNA through the redevelopment of existing underutilized sites, including sites that contain functioning residential and commercial sites, plus parcels with available space for new residential development (such as schools, churches, and public uses), and some vacant sites. Currently, housing constructed in the County for the 2015-2023 Housing Element cycle exceeded the County’s total RHNA; however, the County is not currently on track to meet its RHNA this cycle

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<sup>3</sup>Association of Bay Area Governments (ABAG), Final Regional Housing Needs Allocation Plan: San Francisco Bay Area, 2023-2031, adopted December 2021, Updated March 2022.

for very-low and moderate income units, although it is meeting the standard for low and above-moderate income units.<sup>4</sup>

### 16.3 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to population and housing that could result from the Project and discusses policies and actions that would avoid or reduce those potential impacts.

#### 16.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to population and housing if it would:

- A. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); or
- B. Displace substantial numbers of existing people or housing, especially affordable housing, necessitating the construction of replacement housing elsewhere.

#### 16.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

This section contains the proposed revised and new policies and implementing programs from the Housing Element Update that would avoid or reduce significant population and housing impacts. The Safety Element Update does not contain policies or implementing programs that specifically address these impacts.

Policy 4.1: Tenant Protection – Implement policies and actions to protect tenants from unlawful evictions as well as direct and indirect (economic) displacement, and to promote greater education around tenants' rights.

Policy 4.3: Affirmatively Further Fair Housing – Ensure that the County's land use, development, and housing policies further the goal of equal access to housing opportunities.

Program 3: Replacement Housing – Development on all nonvacant sites designated in the Housing Element, at all income levels, that contain existing residential units, or units that were rented in the past five years, is subject to the replacement housing requirements specified in Government Code sections 65583.2 and 65915.

#### 16.3.3 Impacts and Mitigation Measures

The Project proposes sites for housing that would allow up to 5,214 new housing units to be developed, which meets the RHNA described in Chapter 3, Project Description, as well as a reasonably foreseeable number of density bonus units and a buffer number of additional units recommended by HCD. As part of the process to identify these proposed housing sites, the

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<sup>4</sup>County of Marin, Open Data, "Housing Production," <https://data.marincounty.org/stories/s/k2pv-b86k>, accessed 5/21/22.

County evaluated a larger number of “candidate housing sites,” which could allow development of up to 10,993 units. These candidate housing sites will allow decision-makers to consider alternate approaches to satisfying the RHNA in the event that “Project Sites” prove infeasible or undesirable due to potential environmental impacts.

This population and housing evaluation applies to the candidate housing sites and is provided at a programmatic level consistent with the level of detail of the proposed Project.

**Impact 16-1: Project Inducement of Substantial Unplanned Population Growth.** *[Threshold of Significance (a)]* Development facilitated by the Housing Element Update would lead to the addition of up to 5,214 housing units during the Housing Element Update planning period, 2023-2031.

The Housing Element Update assumes an average of 2.371 persons per new household (pph) in the Planning Area, based on State demographic data.<sup>5</sup> Using this pph factor, buildout of all 5,214 housing units could result in the addition of up to approximately 12,362 new residents to the population of the County (unincorporated area) by the year 2031, which is the estimated Housing Element buildout horizon.<sup>6</sup> However, the County’s RHNA requirement is less than the total buildout potential of all of the candidate sites, or 3,569 units, which would potentially result in a population increase of approximately 8,462 new residents.<sup>7</sup>

As described in this EIR (e.g., Chapter 3, Project Description; Chapter 18, Transportation; Chapter 19, Utilities and Service Systems), implementation of the Housing Element Update would generally facilitate development in areas that already contain residential, commercial, and other community facilities, or otherwise would occur on vacant sites with neighboring development. This “infill development” is consistent with CWP sustainability goals and policies and is intended to accommodate the County’s mandated share of regional growth while encouraging reuse of underutilized parcels and preserving well-established residential neighborhoods. Future development facilitated by the Project would be planned in accordance with the Housing Element Update, and therefore would not result in unplanned population growth.

Potential activities facilitated by the Safety Element Update would include possible construction of road improvements, creation of new evacuation routes or improvement of deficient routes, other access provisions, and possible retrofitting of County buildings and critical facilities. These activities would not open a new area to development through the provision of extended roadways; instead, road improvements would focus on the needs of new housing development facilitated by the Project.

Although utilities improvements would be required in some areas of the county to support new development, as discussed in Chapter 19, Utilities and Service Systems, and could potentially induce some growth in adjacent areas, these improvements would not extend utilities to areas that are not currently served and would be on a scale sufficient to adequately serve the planned new housing units and existing development. As such, the proposed Project would not directly induce substantial unplanned population growth through developing new housing, nor would it

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<sup>5</sup>California Department of Finance, Demographic Research Unit; Table 2: E-5 City/County Population and Housing Estimates, 1/1/2021.

<sup>6</sup>5,214 housing units X 2.371 persons per household (pph) = 12,362 persons.

<sup>7</sup>3,569 units X 2.371 pph = 8,462 persons.



indirectly induce substantial population growth through the extension of roads or other infrastructure to new areas. In addition, the Project proposes amendments to the General Plan and zoning designations to allow for this new housing development and to maintain consistency with the CWP and County Code. Therefore, the Project's population growth would not be considered "unplanned," and the impact on population growth would be **less than significant**.

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**Impact 16-2: Temporary Construction-related Employment Impacts.** *[Threshold of Significance (a)]* Future potential development facilitated by the Project would primarily be new housing as proposed in the Housing Element Update. This development would be expected to result in the temporary creation of construction jobs over the timeframe of implementation. Potential activities facilitated by the Safety Element Update would include possible construction of road improvements, creation of new evacuation routes or improvement of deficient routes, other access provisions, and possible retrofitting of County Buildings and critical facilities. These activities would also be expected to result in temporary construction jobs. While it is anticipated that an adequate construction workforce will continue to exist within the County or nearby, construction personnel would generate a temporary increase in employment but would not be anticipated to generate substantial population growth in the County. No new housing would need to be built for these workers because the jobs would be temporary, and the workforce is expected to be local. Physical effects on the environment would be limited to worker commutes, which would also be temporary (see Chapter 18, Transportation, for a discussion of Project transportation impacts). Based on the temporary nature of the work proposed and the use of a local workforce, no substantial population growth would be anticipated to result from this construction activity. This impact would be **less than significant**.

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**Impact 16-3: Population and Housing Displacement Effects.** *[Threshold of Significance (b)]* Development facilitated by the Housing Element Update would lead to the addition of up to 5,214 housing units during the Housing Element Update planning period, 2023-2031, as discussed above in Impact 16-1. As described in Chapter 3, Project Description, these 5,214 housing units include: (1) the Housing Element Update "Proposed Sites Inventory" total of 3,928 units to meet the RHNA, (2) the HCD-recommended buffer to ensure an adequate number of sites, and (3) additional units that could be proposed under State Density Bonus law. In addition, the County determined that evaluating a larger number of "candidate housing sites," up to 10,993 units, would ensure that suitable replacement sites are available for any site(s) eliminated by HCD or the Board of Supervisors. Proposed housing sites would be located in areas of the County currently containing development, although some sites are vacant (but adjacent to other development), otherwise known as "infill housing." As discussed in subsection 16.1.3, some sites may contain existing housing where new housing would be proposed, which would increase the total number of units on the site (increase housing density). This could result in the temporary displacement of some existing housing units and/or residents, although it is not anticipated that a substantial amount of housing would be displaced. Moreover, several of the policies and programs proposed in the Housing Element Update are existing policies and implementing programs that are being carried forward for 2023-2031 and are designed to increase the supply of affordable housing, which would have a beneficial effect by creating additional housing and therefore would not result in the net displacement of housing stock. Chapter 3, Project Description, provides a discussion of the policies and programs carried forward from the existing 2015-2023 Housing Element. Also, as required by State Law (AB 1397), development on non-vacant sites containing existing residential units is subject to the

replacement requirement pursuant to AB 1397; specifically, the replacement of units affordable to the same or lower income level is required as a condition of any development on a non-vacant site.

The applicable new Housing Element Update policies and implementing programs that would reduce potential risk of population and housing displacement are listed below. Their full text is included in subsection 16.3.2 (Proposed Policies and Actions to Avoid or Reduce Significant Impacts).

- Policy 4.1: Tenant Protection
- Policy 4.3: Affirmatively Further Fair Housing
- Program 3: Replacement Housing

Because the Housing Element Update is designed to increase the overall amount of housing available in the County, and State law requires replacement housing for development on non-vacant sites, this impact would be considered ***less than significant***.

### **Cumulative Population and Housing Impacts**

Potential housing facilitated by the Housing Element Update would include development on vacant sites and the replacement of existing development with new development. During the Housing Element Update planning period, 2023-2031, this potential development could total up to 5,214 housing units. The increases in population associated with this housing reflect the planned continuation of CWP policies to provide housing throughout the County. Furthermore, this anticipated growth in Marin County is included in the “Final RHNA Plan: San Francisco Bay Area, 2023-2031,” which was adopted by the Association of Bay Area Governments (ABAG) Executive Board on December 16, 2021. As such, the population growth associated with the Project is not unplanned, as discussed in Impact 16-1 and Impact 16-2.

With regard to indirect growth, the Project would not induce substantial population growth by introducing unplanned infrastructure or accelerating development in an undeveloped area. As discussed in Chapter 19, Utilities and Service Systems, the Project would involve development on infill sites in areas that already have infrastructure systems. Also, the Project would include improvements necessary to accommodate potential future development and would be sized to serve the planned development.

With adoption of the Housing Element Update, the amount and type of direct and indirect cumulative growth would be incorporated into the CWP and would, therefore, not be unplanned. In addition, the 11 incorporated cities and towns in the County are undergoing similar housing element updates to meet their combined total RHNA of 10,836 units. This anticipated growth in Marin County is included in the “Final RHNA Plan: San Francisco Bay Area, 2023-2031,” which was adopted by the Association of Bay Area Governments (ABAG) Executive Board on December 16, 2021. Therefore, the Project’s contribution to population growth and housing would not be cumulatively considerable, and cumulative impacts would be ***less than significant***.

With respect to potential displacement of housing units and people, as discussed in Impact 16-3, the Project would be required to replace affordable housing units; in addition, the overall goals of the Housing Element Update are to provide additional new housing. Therefore, the

Project's contribution to displacement of housing and people would not be cumulatively considerable, and the associated cumulative impacts would be ***less than significant***.

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## 17. PUBLIC SERVICES

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Public Services (and Recreation). <i>Would the project:</i></b>				
<i>a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:</i>				
<i>Fire protection?</i>			X	
<i>Police protection?</i>			X	
<i>Schools?</i>			X	
<i>Parks?</i>			X	
<i>Other public facilities?</i>			X	
<i>b) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?</i>			X	
<i>c) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?</i>			X	

This chapter describes the environmental setting and regulatory framework necessary to evaluate potential environmental impacts to public services resulting from the Project, identifies thresholds of significance,<sup>1</sup> describes potential impacts that could result from the Project, and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts.

<sup>1</sup>State CEQA Guidelines, Appendix G, item XV (a) and items XVI(a) and (b).

## 17.1 ENVIRONMENTAL SETTING

### 17.1.1 Fire Protection and Emergency Medical Service

Further environmental setting and regulatory setting information specifically regarding wildfire protection in Marin County is included in Chapter 20, Wildfire, of this EIR.

A. Overview of Existing Fire Protection in Marin County. Because so much of Marin County is undeveloped and owned by either the federal government or the State of California as wildland and open space parks, fire protection to the unincorporated County involves multiple agencies and agreements for fire protection services.

Fire protection in California is the responsibility of either the federal, state, or local government. In state responsibility areas (SRA), which are defined according to land ownership, population density, and land use, CAL FIRE has a legal responsibility to provide fire protection. CAL FIRE is not responsible for densely populated areas, incorporated cities, agricultural lands, or federal lands. Local responsibility areas (LRA) include incorporated cities and cultivated agriculture lands. In LRAs, fire protection is provided by city fire departments, fire protection districts, or counties, or by CAL FIRE under contract to local government.

In Marin County, CAL FIRE contracts with Marin County Fire Department (MCFD) to provide wildland fire protection and associated fire prevention activities for the SRA, which comprises more than half of the total land area in Marin. The MCFD is responsible for the protection of approximately 200,000 acres of SRA within the county and is the primary agency that handles wildland fires. MCFD also provides similar protection services to approximately 100,000 acres of Federal Responsible Area (FRA) in the Golden Gate National Recreation Area (GGNRA), Muir Woods National Monument, and Point Reyes National Seashore.

MCFD staffs an Emergency Command Center (ECC) that dispatches for MCFD and local volunteer fire departments, coordinates wildland incidents within the SRA or FRA, and acts as the California Governor's Office of Emergency Services (CalOES) coordination center for fire dispatching. In addition to MCFD, there are twelve fire service agencies and one volunteer department, the Tomales Volunteer Fire Company (TVFC), that provide fire services in Marin County. TVFC provides twelve firefighters to MCFD's Tomales response zone. One private fire brigade, Skywalker Fire, is situated on the Lucas Valley Ranch.

The 2020 Marin County Community Wildfire Protection Plan (CWPP) provides a science-based assessment of wildfire hazards and threats to homes in the wildland urban interface (WUI) of Marin County. The CWPP was developed through a collaborative process involving Fire Safe Marin; Marin County fire agencies; County officials; County, state, and federal land management agencies; and community members. The purpose of the CWPP is to provide fire agencies, land managers, and other stakeholders in Marin County with guidance and strategies to reduce fire hazard and the risk of catastrophic wildfires in the WUI, while promoting the

protection and enhancement of the county's economic assets and ecological resources.<sup>2</sup> CWPP Figure 4 shows a jurisdictional map for MCFD and the other twelve fire service agencies in Marin County, and Table 2 provides information on all of the fire service agencies in the county.

Each fire department/district in Marin County partners and works closely with Fire Safe Marin (FSM), which is a nonprofit organization with the dual mission of reducing wildland fire hazards and improving fire safety awareness in Marin County. The local fire department is responsible for enforcing the Fire Code, setting fire safety standards, and providing community safety education and services. All fire departments share responsibility for emergency response and work together through a mutual aid system to ensure a statewide response to major wildfires and other large emergency incidents.<sup>3</sup>

B. Fire Services. The MCFD operates six fire stations with a total of 12 fire engines, three ambulances, and other service vehicles. In addition to the six fire stations, the Tamalpais Fire Crew maintains a 14-person crew that works nine months throughout the year clearing brush and responding to fire events.<sup>4</sup> The MCFD is responsible for the protection of approximately 200,000 acres of State Responsibility Areas (SRA) within the county and is the primary agency that handles fire and emergency services. MCFD also provides fire protection services to approximately 100,000 acres in the Golden Gate National Recreation Area (GGNRA), Muir Woods National Monument, and Point Reyes National Seashore.

The unincorporated county is served by:

- Tomales Fire Station, 599 Dillon Beach Road, Tomales
- Point Reyes Fire Station, 4th and B Streets, Point Reyes Station
- Hicks Valley Fire Station, 7330 Red Hill Road, Petaluma
- Woodacre Fire Station, 33 Castle Rock Road, Woodacre
- Throckmorton Ridge Fire Station, 816 Panoramic Highway, Mill Valley
- Marin County Fire Station, 850 Drake Avenue, Marin City

C. Other Services. Additional programs and services provided by the MCFD include rescue operations, such as water rescue and urban search, as well as hazardous materials response

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<sup>2</sup>Marin County Community Wildfire Protection Plan, [https://firesafemarin.org/wp-content/uploads/CWPP\\_2020\\_Final\\_1-4-2021\\_FSM\\_published.pdf](https://firesafemarin.org/wp-content/uploads/CWPP_2020_Final_1-4-2021_FSM_published.pdf).

<sup>3</sup>FIRE Safe Marin, Marin County Fire Department, [Marin Community Wildfire Protection Plan](https://firesafemarin.org/resources/marin-community-wildfire-protection-plan/), December 2020, <https://firesafemarin.org/resources/marin-community-wildfire-protection-plan/>, accessed 5/5/22.

<sup>4</sup>Marin County Fire Department Operations Page, <https://www.marincounty.org/depts/fr/divisions/operations> accessed 5/5/2022.

and removal, public education, disaster preparedness, pre-fire management, vegetation management, and defensible space management.

The MCFD Prevention Bureau is responsible for minimizing or preventing damage to life and property resulting from fire. Supervised by the Fire Marshal, the Bureau develops amendments to the fire code and fire prevention standards; enforces fire safety and law enforcement sections of the fire code and Public Resources Code (PRC); manages the Residential Wildfire Hazard Reduction Program and the Business Inspection Program; conducts fire investigation and fire and life safety programs in County Fire-identified “direct protection areas”; and reviews all land development and building plans to verify if a development is consistent with the fire code and adequately safe against fires as part of fire code permit issuance.

Community risk reduction includes fire and life safety education programs, the establishment of wildfire evacuation plans, active code enforcement, and inspection programs to prevent fires. Domestic preparedness planning and response programs include the Community Emergency Response Team (CERT) program, designed to help Marin County citizens be self-sufficient after a major disaster. Pre-fire management services include clearing brush and other vegetation from areas vulnerable to fire.<sup>5</sup>

D. Emergency Services Plan. Emergency Medical Services operates as an internal organization within the MCFD. Training includes exercises and workshops to prepare for earthquakes, fire, and other community-wide emergency needs.

The County Emergency Operations Plan (EOP) includes actions for mitigating impacts from natural and man-made disasters, such as earthquakes, severe weather, floods, dam and levee failure, drought, and landslides. Further detail on the EOP is provided in Chapter 11, Hazards and Hazardous Materials, of this EIR.

In addition, the CERT program provides training for basic disaster response until public emergency responders can arrive. Marin County firefighters provide training to participants in neighborhoods and workplaces for the CERT program, including medical care, utility control, building damage assessment, fire suppression, and search and rescue operations.

### **17.1.2 Police Protection**

A. Existing Police Services. The responsibilities of the Marin County Sheriff’s Office (MCSO) include police protection for the unincorporated county, maintaining the County jail, providing security to the Superior Court, operating a countywide communications division, operating a documentary services division (e.g., records, warrants), and other policing duties. The Sheriff’s Office is headquartered at 1600 Los Gamos Drive, San Rafael.<sup>6</sup>

MCSO Administrative and Support Services oversees several of the department’s divisions and the majority of the department’s civilian staff, including managing the Communication Division,

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<sup>5</sup>Marin County Fire Department Operations Page.

<sup>6</sup>Marin County Sheriff’s Office, <https://www.marinsheriff.org/about-us>, Accessed 5/2/2022.



Coroner Division, Documentary Services Division, and Professional Standards Unit. Detention Services is responsible for maintaining and staffing the County Jail and providing bailiffs, security, and inmate transportation services, including overseeing the Custody Division, Transportation Unit, and Court Service Division. The Field Service Bureau oversees the Patrol Division, Investigations Division, and Office of Emergency Services.<sup>7</sup>

The Patrol Division provides general law enforcement services in the unincorporated communities of Marin County. Each station's area is divided into patrol beats served by uniformed deputies in marked patrol units. Additional patrol units are assigned during high activity periods as needed. The flexibility of the Patrol Division allows for assignment of additional patrol personnel to address specific crime problems without decreasing the basic patrol staffing level. Additional deputies are also available from the Jail, Civil, and Court Divisions in the event of a major emergency. The Patrol Division is decentralized, operating out of the Main Office and three sub-stations described below:

*Emergency Operations Facility – Main Station:* Serves the communities of Santa Venetia, Los Ranchitos, East San Rafael, Lucas Valley, Marinwood, Loma Verde, Bel Marin Keys, Blackpoint, Greenpoint, Indian Valley, Northwest Novato.

*Kentfield Substation:* Serves the communities of San Quentin Village, Greenbrae, Kentfield, Kent Woodlands, Sleepy Hollow, Oak Manor, Woodacre, San Geronimo, Forest Knolls, and Lagunitas.

*Point Reyes Substation:* Serves the communities of Stinson Beach, Bolinas, Olema, Inverness Park, Inverness, Point Reyes Station, Marshall, Tomales, Dillon Beach, Two Rock, Nicasio, Hick's Valley, and Chileno Valley.

*Southern Substation:* Serves the communities of Marin City, Muir Beach, The Gates Co-op, Tam Valley, Almonte, Homestead Valley, Mt. Tam, Strawberry, and Paradise Drive.

Specialty units within the Field Service Bureau provide multi-jurisdictional support and include but are not limited to: a dive team, search and rescue team, hostage negotiation team, and a Special Response (SWAT) team.

*Office of Emergency Services:* The mission of the Office of Emergency Services (OES) is to lead efforts to prepare for, mitigate, respond to, and recover from disasters. OES provides emergency management services for the County/Operational Area including its eleven cities/towns and 300+ special districts. OES coordinates emergency operations activities among all the various local jurisdictions and develops written guidelines for emergency preparedness, response, recovery and mitigation to natural / man-made disasters, and technological disasters. The Sheriff's OES is mandated by the California Emergency Services Act (Chapter 7, Division

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<sup>7</sup>Marin County Sheriff's Office Organizational Chart, <https://www.marinsheriff.org/assets/downloads/Mcso-Org-Chart.pdf>, Accessed 5/2/2022.

1, Title 2 of Government Code) to serve as the liaison between the State and all the local government political subdivisions comprising Marin County.

The Office of Emergency Services establishes the Marin County/Operational Area Emergency Operations Center (EOC) when directed by County emergency management authority. An EOC is a location from which centralized emergency management can be performed during a major emergency or disaster. This center facilitates a coordinated response by the Director of Emergency Services, Emergency Management Staff and representatives from organizations that are assigned emergency management responsibilities. The level of EOC staffing will vary depending upon the specific emergency situation.

Services within the OES include: Alert Marin which provides alerts on phones via voice, text and email regarding current emergencies and provides updates on current emergencies; Marin Emergency Management Organization, hazard information about various disasters that could affect residents, emergency preparedness, disaster recovery, and disaster communication.

B. Staffing and Equipment. MCSO staff includes 314 full-time equivalent personnel (202 sworn and 112 other law enforcement professionals).<sup>8</sup> Based on Census population data for unincorporated Marin County (population 66,888) this corresponds to a ratio of approximately 3.01 officers per 1,000 residents and 1.82 civilian professionals per 1,000 residents in unincorporated Marin County.

### **17.1.3 Public Schools**

A. Existing School Facilities. Marin County contains 17 school districts, which are coordinated by the Marin County Office of Education (MCOE). Headed by the Marin County Superintendent of Schools, MCOE provides educational programs and services to students, families, and school staff countywide. MCOE collaborates with the county's 17 school districts by providing financial oversight and centralized services in the areas of business, technology, professional development, emergency services, maintenance, and operations.<sup>9</sup> According to the Marin County Office of Education, the county has 21 schools, with a 2021 total of 7,868 students, including 6,331 students in elementary school, 1,392 in middle school, and 145 at the high school level.

The schools are:

- West Marin Elementary
- Tomales Elementary
- Tamalpais Valley Elementary

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<sup>8</sup>Marin County Sheriffs Department web page: <https://www.marinsheriff.org/about-us>. Accessed September 12, 2022.

<sup>9</sup>Marin County Office of Education, <https://www.marinschools.org/Page/4026>, Accessed 4/28/2022.

- Strawberry Point Elementary
- Nicasio Elementary School
- Mary E. Silveira Elementary
- Lucas Valley Elementary
- Loma Verde Elementary
- Lincoln Union Elementary
- Lagunitas Elementary and Middle School (K-8)
- Laguna Elementary
- Inverness Elementary
- Hidden Valley Elementary
- Bolinas-Stinson Elementary
- Anthony G. Bacich Elementary
- Bayside Martin Luther King Jr. Academy
- Vallecito Elementary School
- Adaline E. Kent Middle School
- Miller Creek Middle School
- Venetia Valley K-8
- Tomales High
- Marin County Juvenile Court School

Year 2021 and projected 2030 students for schools in Marin County are shown in Table 17-1.

**Table 17-1:  
Current and Projected Resident Students: Planning Area 2021 and 2030**

	<b>2021</b>	<b>2030</b>	<b>Capacity</b>
<b>ELEMENTARY SCHOOL</b>	6,331	6,126	N/A
West Marin	128		N/A
Tomales	148		N/A
Tamalpais	N/A	N/A	N/A
Strawberry Point	2,634	2,624	N/A
Nicasio	N/A	N/A	N/A
Mary E. Silveira	376	509	510
Lucas Valley	336	332	519
Loma Verde	N/A	N/A	N/A
Lincoln Union	N/A	N/A	N/A
Lagunitas	N/A	N/A	N/A
Laguna	N/A	N/A	N/A
Inverness	36		N/A
Hidden Valley	1,748	1,581	N/A
Bolinas-Stinson	N/A	N/A	N/A
Anthony G. Bacich	528	639	744
Bayside Martin Luther King Jr. Academy	N/A	N/A	N/A
Vallecito	397	441	510
<b>MIDDLE SCHOOL</b>	1,392	1395	1934
Adaline E. Kent	516	465	816
Miller Creek	645	680	868
Venetia Valley	231	250	250
<b>HIGH SCHOOL</b>	166		
Tomales High School	166	N/A	N/A

Source: Marin County Office of Education  
N/A = data not available

**B. School Capacity and Development-Related Enrollment.** Table 17-1 shows 2021 student numbers and student projections for 2030, and Table 17-2 existing Marin County school capacity according to elementary/middle/high school level.

Table 17-3 shows student generation rates used by MCOE to determine school facility needs throughout its service area. Student generation rates are based on a calculation of the number of students per residential unit at a particular moment in time, so these rates can vary over time, as reflected in the number of enrolled students and their respective grade levels, along with the number of residential units in the county.

Based on the MCOE rates and the potential future development of 5,214 housing units during the 2023-2031 period, student generation resulting from the Project could add up to 1,043 new students from the unincorporated county through 2030.<sup>10</sup> Compared to the total current (2021) enrollment of 7,868 students, this potential increase would represent an approximately 13 percent increase in student enrollment.

Marin County schools are responsible for levying impact fees on new development, these fees and the annual increases are established in collaboration with the State. Each school district in the state analyzes the relationships between enrollment projections and facility needs to formulate school impact fees. New residential and commercial development in the county are required to pay the State-authorized school impact fees approved by Marin County. Pursuant to Section 65995(3)(h) of the California Government Code, the payment of statutory school impact fees "...is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization...".

**Table 17-2:  
Existing Marin County School Facility Capacity, 2021**

<b>Grade Level</b>	<b>Facilities Capacity</b>
Elementary School (Grades K-5)	1,773
Middle School (Grades 6-8)	1,934
High School (Grades 9-12)	N/A
<b>Total</b>	<b>3,707</b>

Source: Marin County Office of Education (2022)

N/A = data not available

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<sup>10</sup>5,214 units x 0.2 students per unit = 1,043 students.

**Table 17-3:  
MCOE Student Generation Rates**

<b>Dwelling Type</b>	<b>Student Generation Rate</b>
Multi-Family Dwellings—Apartments, Condominiums	.2
Single Family Detached Homes, Townhouses	.2
Below Market Rate—Apartments, Condominiums, Townhouses	.2

Source: Marin County Office of Education (2022)

#### **17.1.4 Parks and Recreational Facilities**

Marin County Parks Department manages over 17,900 acres spread throughout 39 parks and 34 open spaces including open space parks and beaches, developed parks with pools, playgrounds, lawn turf, tennis, pickle ball, and picnic facilities, a skate park, a BMX, mountain bike, and dirt bike park, walking and bicycle pathways, and boat launch facilities. The Parks Department established a Strategic Plan in 2008 to dictate the future of the County open space, recreation, and parks.<sup>11</sup> The County has also prepared a Road and Trail Management Plan, a Vegetation and Biodiversity Plan, an Inclusive Access Plan, and several regional park master plans to guide the County’s park planning and management efforts.

Pursuant to Marin County Code Section 22.22.100, new residential developments are required to provide developed park and recreational land and/or pay a fee in lieu of parkland dedication, pursuant to the State of California Quimby Act (Quimby) and/or the Mitigation Fee Act (MFA), to help mitigate the impacts of the new residential demand on existing parkland and recreational facilities. In compliance with the Subdivision Map Act, specifically Government Code Section 66477(a)(2), 3 acres of land for each 1,000 persons residing in the county shall be devoted to neighborhood and community park and recreational purposes.

#### **17.1.5 Other Public Facilities**

**A. Libraries.** The County has 10 branch libraries, a mobile library service, and the Anne T. Kent California Room (available by reservation). Together these facilities house the Marin County Free Library collection. These libraries have group study rooms, community rooms, public computers and computer training facilities, open Wi-Fi services, a local history collection, and many children’s services to encourage community engagement.<sup>12</sup>

The 10 fully accessible library branches are located at:

- 14 Wharf Road, Bolinas

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<sup>11</sup>Marin County Parks and Open Space Strategic Plan, June 2008; County of Marin Parks department. [https://www.parks.marincounty.org/-/media/files/sites/marin-county-parks/projects-and-plans/guiding-documents/guidingdocuments\\_strategicplan2008.pdf?la=en](https://www.parks.marincounty.org/-/media/files/sites/marin-county-parks/projects-and-plans/guiding-documents/guidingdocuments_strategicplan2008.pdf?la=en). Accessed 5/12/2022.

<sup>12</sup>Marin County Library, <https://marinlibrary.bibliocommons.com/locations/list/>, Accessed 5/5/2022.

- 3501 Civic Center Drive, Room 427, San Rafael
- 707 Meadowsweet Drive, Corte Madera
- 2097 Sir Francis Drake Boulevard, Fairfax
- 15 Park Avenue, Inverness
- 164 Donahue Street, Marin City
- 1720 Novato Boulevard, Novato
- 11431 State Route One, Point Reyes Station
- 931 C Street, Novato
- 3521 Shoreline Highway, Stinson Beach

B. Other Public Facilities. The County has numerous theatres, performance centers, and museums, where the County's recreation programs and activities are often held, including 18 museums, 32 theaters, and six performance centers.<sup>13</sup>

## 17.2 REGULATORY SETTING

### 17.2.1 Fire Protection and Emergency Medical Service

#### 17.2.1.1 Federal Regulations

**Federal Disaster Mitigation Act of 2000.** The Disaster Mitigation Act of 2000 authorizes the Federal Emergency Management Agency (FEMA) to set mitigation planning requirements for state, local, and Indian Tribal governments as a condition of mitigation grant and disaster assistance, and requires close coordination of mitigation planning and implementation efforts between FEMA and jurisdictions. The Federal Disaster Act of 2000 requires the preparation of Local Hazard Mitigation Plans (LHMPs) that addresses emergency response and planning for the environmental hazards found within a community. LHMPs must be updated every five years.

#### 17.2.1.2 State Regulations

**California Governor's Office of Emergency Services (Cal OES).** Cal OES serves as the lead State agency for emergency management in California. Cal OES coordinates the State response to major emergencies in support of local government. It is also responsible for collecting, verifying, and evaluating information about the emergency, facilitating communication with local government, and providing affected jurisdictions with additional resources when necessary. Cal OES may task State agencies to perform work outside their day-to-day and

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<sup>13</sup>Marin County Recreation, Arts and Theatres, <https://www.marincounty.org/recreation>, Accessed 5/5/2022.

statutory responsibilities. Local jurisdictions first use their own resources and, as they are exhausted, obtain more from neighboring cities and special districts, the county in which they are located, and other counties throughout the state through the Statewide Mutual Aid System.

**California Fire Code (Title 24, Part 9, California Code of Regulations).** The California Fire Code is based on the International Fire Code, with necessary California amendments. This code prescribes regulations consistent with nationally recognized good practices for the safeguarding, to a reasonable degree, of life and property from the hazards of fire and explosion. It also addresses: (1) dangerous conditions arising from the storage, handling, and use of hazardous materials and devices; (2) conditions hazardous to life or property in the use or occupancy of buildings or premises; and (3) provisions to assist emergency response personnel.

**California Building Standards Code.** The 2019 California Building Code (CBC) became effective January 1, 2020, including Part 9 of Title 24, the California Fire Code.

**California Code of Regulations, Title 19.** Title 19, Division 2, chapters one through six of the California Code of Regulations, establishes regulations related to emergency response and preparedness.

**California Health and Safety Code (Sections 13000 et seq.).** This code establishes State fire regulations, including regulations for building standards (also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

### 17.2.1.3 Local Regulations

**Marin County Multi-Jurisdiction Local Hazard Mitigation Plan (MCM LHMP) 2018.** The Marin County Multi-Jurisdiction Local Hazard Mitigation Plan involves the 11 incorporated towns and cities in the County, the North Marin Water District, and the County's input on the unincorporated territories, with an overall strategy to assess risks posed by natural hazards and to develop a mitigation strategy for reducing risks in the County. The plan focuses on mitigation *before* rather than after disasters by: (1) identifying natural hazards faced by the communities, the water district, and the County (e.g., earthquakes, flooding, wildfire), (2) assessing the communities', the water district's, and County's vulnerability to these hazards, and (3) identifying specific preventive actions that can be taken to reduce the risk from the hazards. The plan, which has been approved by the 11 incorporated towns and cities, the water district, and by the Marin County Board of Supervisors, fulfills the requirements of the Federal Disaster Mitigation Act of 2000.

**Marin County Emergency Operations Plan.** The Marin Operational Area (OA) Emergency Operations Plan (EOP) addresses the County's planned response to emergency situations associated with disasters, including provisions for wildfire. The EOP establishes the organization and management of the County's Emergency Operations Center (EOC), which administers mutual aid requests for fire support (e.g., firefighting resources and personnel) to combat wildland/urban interface fire and requests for statewide resources via the State's Master Mutual Aid Agreement (administered by the State OES). During an emergency, the EOC engages in situation analysis, public information, response coordination, and resource coordination to direct Marin County operational resources.



**Strategic Fire Plan for Marin County (2012).** The Strategic Fire Plan identifies and prioritizes pre-fire and post-fire management strategies and tactics to reduce loss due to fire within the County. The Plan, collaboratively developed by Federal, State, City, and County agencies within the County and other interested parties, is intended for use as a planning and assessment tool. It provides an overview of the County's fire setting and geographic, topographical, and climate characteristics and challenges; describes firefighting capabilities and agencies throughout the County; and identifies at-risk communities and natural resource assets for employment of pre-fire management strategies (raising public awareness through information and education programs, enforcement of more stringent building standards, vegetation management and defensible space, and fire apparatus access and water supply requirements for structures in wildland-urban interface areas).

**2017-2020 Marin County Fire Department Strategic Plan.** The Marin County Fire Department's Strategic Plan outlines priorities for fire, rescue, prevention, and emergency medical services for a three-year period. The Plan guides Fire Department planning related to department policy, operational, and budget decisions; maintaining a highly trained work force; providing oversight and management of department programs; and increasing fire department personnel safety and community education.

**Marin County Countywide Plan (CWP).** The adopted 2007 CWP addresses fire protection/emergency medical service with the following applicable adopted policies:

#### **Socioeconomic Element – Public Safety policies**

- Policy PS-3.1 Plan Thoroughly for Emergencies. Ensure that the County, its citizens, businesses, and services are prepared for effective response and recovery in the event of emergencies or disasters.
- Policy PS-3.2 Safe Public Structures. Protect public health and safety through appropriate siting and rehabilitation of public facilities.

#### **Natural Systems and Agriculture Element – Environmental Hazards policies**

- Policy EH-4.4 Ensure Adequate Emergency Response. Ensure that there is an adequate number of trained and certified emergency medical technicians to address the increase in medical demand.

**Marin County Code.** County Code Chapter 19.04 sets forth regulations related to fire prevention, building code standards (including fire flow), permits, fire access standards, and fire protection systems in buildings (e.g., automatic fire extinguishing/sprinkler systems, fire alarms).

### **17.2.2 Police Protection**

#### **17.2.2.1 Local Regulations**

**Marin County Countywide Plan (CWP).** The adopted 2007 CWP addresses police service with the following applicable adopted policies:

### **Socioeconomic Element – Public Safety policies**

- Policy PS-1.1 Encourage Community Involvement in Crime Control. Promote community policing and restorative justice programs, such as the County Adolescent and Adult Drug Courts; other problem-solving courts, such as domestic violence, mental health, and teen courts; the Victim Offender Reconciliation Program (VORP); Neighborhood Accountability Boards; and other restorative programs. Support and encourage reporting of child and adult abuse and neglect.
- Policy PS-1.2 Improve Infrastructure to Discourage Crime. Remedy any public facilities with problems that might encourage criminal activity, such as low lighting and blind spots that result from landscape features or fences.
- Policy PS-2.1 Counteract Domestic Violence and Juvenile Crime. Decrease the incidence of domestic violence, including child abuse and neglect, elder and dependent adult abuse and neglect, and crimes by or against youth.
- Policy PS-2.2 Support Services for Mentally Ill Criminal Offenders. Reduce the incidence of crimes by the mentally ill by continuing to support the Support and Treatment After Release (STAR) and mental health court programs.

#### **17.2.3 Public Schools**

##### **17.2.3.1 State Regulations**

**California Code of Regulations.** The California Code of Regulations, Title 5, Education Code, governs all aspects of education within the state.

**California Government Code.** Section 65995 of the California Government Code provides for school facility financing and the mitigation of impacts on the need for school facilities from land use approvals by establishing statutory fees that may be levied or imposed in connection with, or made a condition of, any land use approval, to be used for the construction or reconstruction of school facilities.

##### **17.2.3.2 Local Regulations**

**Marin Countywide Plan (CWP).** The adopted 2007 CWP addresses educational facility needs through the following applicable adopted policies:

### **Built Environment Element – Community Development policies**

- Policy CD-2.5 Locate Housing Near Activity Centers. Provide housing near jobs, transit routes, schools, shopping areas, and recreation to discourage long commutes and lessen traffic congestion.
- Policy CD-5.1 Assign Financial Responsibility for Growth. Require new development to pay its fair share of the cost of public facilities, services, and infrastructure, including but not limited to transportation, incremental water supply, sewer and wastewater treatment, solid waste, flood control and drainage, schools, fire and police protection, and parks and

recreation. Allow for individual affordable housing projects to be exempted from the full cost of impact fees, subject to meeting specified criteria.

- Policy CD-8.9 Establish Public Facility, Quasi-Public Facility, and Open Space Land Use Categories. Lands used for public facilities and quasi-public institutional purposes, including airports, schools, hospitals, cemeteries, government facilities, correctional facilities, power distribution facilities, sanitary landfills, and water facilities, are designated Public Facility or Quasi-Public Facility, depending on the nature of their use.

### **Built Environment Element –Transportation policies**

- Implementing Program TR-2.j Ensure Safe Routes to Schools. As funding permits, continue to work with TAM and local school districts to ensure that children have safe walking and bicycling routes to school. Support TAM’s program to produce Safe Routes to School Plans for the county’s schools providing a required planning basis for the Measure A–financed Safe Pathways County Capital Improvement Program. Continue the TAM-managed Safe Routes to Schools encouragement and education program, which provides bicycle and pedestrian safety training, events, contests, law enforcement, and the identification of potential bicycle and pedestrian transportation improvements.

### **Socioeconomic Element – Public Safety policies**

- Implementing Program PS-3.i Site Public Structures Safely. Locate facilities necessary for the protection of public safety and/or the provision of emergency services away from areas subject to inundations, subsidence, or slope or ground failure in a seismic event as feasible. Prohibit placement of critical public facilities such as schools, hospitals, streets, communication systems, utility and public safety structures, and reservoirs in designated fault zones.

## **17.2.4 Parks**

### **17.2.4.1 State Regulations**

**Quimby Act – California Code Section 66477.** The Quimby Act was approved by the California legislature to set aside parkland and/or payment of fees due in lieu of parkland dedication to help mitigate the impacts from new residential developments. This legislation was initiated in response to California’s increased rate of urbanization and the need to preserve open space and provide parks and recreation facilities for California’s growing communities. The Quimby Act authorizes local governments to establish ordinances requiring developers of new residential subdivisions to dedicate parkland, pay a fee in-lieu of parkland dedication, or perform a combination of the two at the discretion of the County.

**Mitigation Fee Act.** In 1989, the State Legislature passed Assembly Bill 1600 (AB1600), adding Section 66000 et seq. to the California Government Code (the “Mitigation Fee Act”), which sets forth requirements for local agencies to follow if they collect fees from developers to defray the cost of the construction of public facilities related to development projects. These legal requirements are frequently referred to as “AB 1600 requirements.” Each local agency imposing such development impact fees must prepare an annual report providing specific

information about these fees (i.e., a “nexus study”) that shows the proper connection of the fees to the project and how accounting and reporting for the fees collected are regulated.

#### **17.2.4.2 Local Regulations**

**Marin County Parks and Open Space Strategic Plan.** The County Strategic Plan addresses park and recreational needs, and the objectives necessary for achieving countywide needs.

Applicable plan goals include:

- Goal 1: Protect and Restore Our Lands. Protect, restore, and preserve the natural systems of the lands held in trust for current and future generations.
- Goal 2: Grow and Link the County’s Systems of Parks, Trails, and Protected Lands  
Complete the County’s system of parks, open space, and trails. Support the efforts of other agencies, organizations, and communities to fulfill their land preservation and system goals.
- Goal 4: Connect Communities with the Land for Recreation and Health. Offer all people opportunities to be active and healthy while enjoying safe and well-maintained lands and facilities.

**Marin County Development Code.** County Code Chapter 22.98.040 (Developmental Code) establishes requirements for new residential development to provide developed park and recreational facilities and/or pay a fee in lieu of such dedication, at the discretion of the County.

#### **17.2.5 Other Public Facilities**

##### **17.2.5.1 Local Regulations**

**Marin Countywide Plan (CWP).** The adopted 2007 CWP also addresses other community facility needs. Applicable adopted CWP policies include:

#### **Built Environment Element – Community Development policies**

- Policy CD-2.5 Locate Housing Near Activity Centers. Provide housing near jobs, transit routes, schools, shopping areas, and recreation to discourage long commutes and lessen traffic congestion.
- Implementing Program CD-1.e Protect Open Lands in the Coastal Corridor. Work with individual landowners; local, State, and federal agencies; and nongovernmental organizations to preserve the rural character, agriculture, and open lands, and protect existing communities and recreational opportunities, in the Coastal Corridor.

#### **Built Environment Element –Transportation policies**

- Implementing Program TR-3.h Implement a Traffic Reduction Program for Recreational Traffic to West Marin. Collaborate with Caltrans; local, State, and federal parkland agencies; and local communities to benchmark existing traffic conditions on roads to West Marin and provide ongoing traffic monitoring during peak recreation periods on access routes to West Marin. Identify and implement alternatives to recreational automobile travel to

recreation areas in West Marin, including, but not limited to, extended and expanded shuttle bus service, shuttle service to remote parking lots for early trip capture, travel advisory signage, and other similar measures.

### 17.3 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to public services that could result from the Project and discusses components of the Project that would avoid or reduce those potential impacts.

#### 17.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to public services and recreation if it would:

A. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

- fire protection,
- police protection,
- schools,
- parks, or
- other public facilities

B. increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or

C. include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

#### 17.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

This section contains the proposed revised and new policies and implementing programs from the Safety Element Update that would avoid or reduce significant public services and recreation impacts. The Housing Element Update does not contain policies or implementing programs that specifically address these impacts, although future housing development could affect the need for new public services and/or lead to physical deterioration of recreational facilities through increased use. Further detail on the County's wildfire protection setting and analysis of this project's impact is provided in Chapter 20, Wildfire, of this EIR. Underlined text indicates new policy text being added to Section 2.6 Environmental Hazards of the Natural Systems and Agriculture Element (referred to as the Safety Element) and text which is ~~struck-out~~ indicates existing policy text being deleted.

EHS 2.3 Disaster Readiness. Maintain a level of preparedness to respond to emergency situations that will save lives, protect property, and facilitate recovery with minimal disruption.

Implementing Program EHS 2.3.a Update the Emergency Recovery Plan. Update the County's emergency recovery plan, which addresses the steps that will be taken when an emergency situation occurs and during the immediate aftermath. Incorporate a framework for short-term immediate assistance for residents who have lost housing and access to resources and long-term housing re-construction plans, re-construction of facilities and infrastructure, including those essential for critical medical services and utility services, and aid-based reimbursement for eligible disaster-related costs. Identify federal, state, tribal, regional, and private sector programs and assistance to supplement local disaster response efforts. Integrate the MCM LHMP mitigation actions and EOP, where relevant, into the Emergency Recovery Plan.

Implementing Program EHS-2.3.e Provide and Support Emergency Preparedness Training. Support the activities of Local Disaster Councils and fire departments in offering community emergency response training courses. Provide and support on-going disaster preparedness and hazard awareness training to all County employees, other responding agencies, and Local Disaster Councils. Ensure training occurs regularly, such as every three years, and includes emergency response approaches to vulnerable populations that cannot respond to a disaster without assistance.

Policy EHS 2.4 Effective Emergency Access and Evacuation. Ensure that first responders have adequate emergency access routes and that County residents, businesses, workers, and visitors can effectively evacuate during or after a disaster.

Policy EHS 2.5 Adequate Services. Improve existing and increase future capacity of critical services and infrastructure.

Implementing Program EHS-2.5.b Explore Creation of New Evacuation Centers. Assess the potential for existing community facilities, including but not limited to libraries, churches/places of worship, schools, community and recreation centers, nonprofits, and local businesses, to serve as evacuation centers. Evacuation centers should be outfitted to provide material assistance, phone charging during a power outage, air conditioning during a heatwave, organize welfare checks on vulnerable neighbors, or deliver other services. Consider leveraging potential community resiliency hubs to provide evacuation center services and equipment when standalone evacuation centers are infeasible.

Policy EH-5.3 ~~1~~ Adopt and Implement a Regional Fire Management Plan with Marin Fire Agencies: the Marin Wildfire Prevention Authority, County Fire, and FireSAFE Marin. Develop a collaborative, proactive approach to manage wildfire losses by identifying hazard risks and enacting effective mitigation strategies.

Implementing Program EHS-4.a ~~5.1.c~~ Provide Information About Fire Hazards. Work with Marin Fire Agencies, FIRESafe Marin, the Marin County Fire Department, and other local, regional, and State agencies to make maps of areas subject to wildland fire hazard, publicly available, and to provide public information and provide publicly available and accessible

educational programs regarding fire hazards, and techniques for reducing susceptibility to fire damage and identifying areas of low water pressure.

Policy EH-5.2 Ensure Adequate Fire Protection. Ensure that adequate fire protection, including adequate evacuation routes, is provided in new development and when modifications are made to existing development.

Implementing Program EHS-2.5.a Assess Critical Services Capacity. Conduct an assessment of existing critical services for adequate capacity considering the projected scale of new development and climate change-induced increases in the severity of hazards. Use the service capacity assessment to create or update minimum standards for existing and future development to meet current and future anticipated demands for infrastructure (e.g., water, sewer, roads), privately provided services (e.g., telecommunications, gas, electricity), and County provided services (e.g., police, fire). Purchase permanent and/or portable generators for critical facilities, infrastructure, and services that lack adequate backup power.

Implementing Program EHS-5.2.b Consider Development Impacts to Fire Service. Consider additional impact or mitigation fees, or a benefit assessment, to offset the impact of new development on fire services.

Implementing Program EHS-5.2.c Describe Training Needs for Emergency Services. Work with the Office of Emergency Services, Marin County Fire Department, Marin County Sheriff, and other organizations to identify and describe goals and standards for emergency service training.

Implementing Program EHS-5.2.d Continue to Improve Street Addressing. Continue to implement the program to improve and standardize the County street addressing system in order to reduce emergency service response times. Where applicable, coordinate the program with the cities.

Implementing Program EHS-5.3.a Continue to Revise Adopted Standards. Continue to adopt revisions to the International Fire and Building Codes, as amended by the State of California, and other standards which address fire safety adopted by the State of California. Review, revise, and/or adopt existing or new local codes, ordinances, and Fire Safe Standards to reflect contemporary fire safe practices.

EH-5.14 Limit Risks to Structures. Ensure that adequate fire protection protective features are in place in new development and when modifications are made to existing structures.

Implementing Program EHS-4.k 5.4.a Amended Urban Wildlands Urban Interface (WUI) Regulations. Work with Marin Fire Agencies Marin fire departments to prepare and adopt WUI regulations for new development and substantial remodels in order to reduce fire hazards in high and extreme fire hazard areas. Track and update standards as the areas of high and extreme fire hazards are re-defined.

Implementing Program EHS-4e 5.4.c Require Compliance with Fire Department Conditions. Continue to refer land development and building permit applications to the County Fire

Department or local fire district for review, and incorporate their recommendations as conditions of approval as necessary to ensure public safety. Continue to require compliance with all provisions of the most recently adopted version of the California Fire Code (with local amendments).

### 17.3.3 Impacts and Mitigations Measures

The following analysis is provided at a programmatic level consistent with the level of detail of the proposed Project.

To comply with the housing requirements established by the RHNA, Marin County must accommodate a potential buildout of 3,569 new residential units as part of the “Proposed Project”. As shown in Table 3-2 in Chapter 3, Project Description, the Project, in combination with the RHNA, includes housing components (e.g., potential development under the density bonus provisions of State law as well as Additional Dwelling Units and a California Department of Housing and Community Development-recommended buffer) that that could accommodate up to 5,214 residential units.<sup>14</sup>

#### **Impact 17-1: Increase in Fire Protection/Emergency Medical Service (EMS) Demands.**

*[Threshold of Significance (a)]*. The anticipated increase in housing development would occur during the 2023-2031 Housing Element Update planning period and would result in an increase in demand for firefighting and protection services from MCFD and the other 12 firefighting agencies that serve the unincorporate County, including additional calls for fire prevention, protection, and suppression, and emergency medical service assistance that may require additional staff in order to maintain acceptable service ratios or response times.

The County assesses a fire prevention fee, which would be applied to new development facilitated by the Housing Element Update. In addition, proposed Implementing Program EHS-5.2.b Consider Development Impacts to Fire Service, states, “Consider additional impact or mitigation fees, or a benefit assessment, to offset the impact of new development on fire services.”

Individual project proposals are subject to review and approval by the MCFD, based on uniformly applied standards and regulations. As part of the standard development review process for each individual project proposal, the project applicant must demonstrate compliance with Marin County Code Chapter 16.08, the California Fire Code, and all other applicable regulations. Among other fire protection/EMS requirements, the proposed project must provide the necessary and appropriate ingress/egress points, fire protection systems such as alarms and automatic sprinklers, ensure adequate emergency water supply (fire flow), storage, and conveyance facilities, as well as unobstructed and adequate access for fire protection equipment and personnel. Without County approval of fire protection/EMS provisions, the project would not receive a building permit or occupancy permit, depending on the specific fire

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<sup>14</sup>According to the U.S. Census Bureau, the County has an average unit occupancy of 2.41 persons; therefore a potential buildout of 5,214 new residential units would be expected to generate approximately 12,566 new County residents (5,214 units X 2.41 persons/unit = 12,566 persons).



protection issue that needs to be addressed (e.g., emergency access provisions, hydrant pressure, fire alarm and smoke detector adequacy).

Furthermore, the Safety Element Update includes policies related to fire protection and emergency services. Several of these policies specifically would help ensure that there are adequate fire department resources to serve existing and proposed development, including evaluating safety service limits annually (Policy EHS 2.5), monitoring levels of service for public facilities and services (Implementing Program EHS-5.2.b Consider Development Impacts to Fire Service and Implementing Program EHS-5.2.c Describe Training Needs for Emergency Services), and approving development permits only if adequate services are available to serve the County (Implementing Program EHS-5.4.c Require Compliance with Fire Department Conditions).

Future development projects associated with implementation of the Housing Element Update would result in an incremental increase in need for fire protection services as the County's population grows and the number of residential units increases. It is anticipated that some of the fire departments would need additional firefighting equipment (fire trucks) and additional personnel staffing to address the increase in demand.

In compliance with Policy EH-5.2 Ensure Adequate Fire Protection and its implementing programs, the County would consider the need for increases in fire equipment, facilities, or personnel. As part of this review, the County would receive for consideration the evaluation and recommendation of the fire departments for providing additional equipment, facilities, or personnel, including the timing for providing such resources. Criteria for determining need would include, but not be limited to, existing and projected increases of fire station response times for new development within the County, emergency calls, ratio of fire department staff to population, or the capacity of existing fire stations to house additional staff and equipment needed to serve existing and projected population. If the County finds that additional equipment, facilities or personnel are needed, the County would coordinate with the fire departments to provide for such facilities, equipment, or personnel in a manner timely to ensure existing service levels, including response times, are not impacted.

All projects that are subject to CEQA review would be evaluated to determine whether they can be provided adequate fire prevention and emergency medical services, including adequate response times. If it is determined that adequate services cannot be provided, project specific mitigation may be provided to offset identified service deficiencies.

Compliance with the Safety Element Update policies described above would ensure that fire departments in the County would have adequate equipment and staffing to serve future development associated with implementation of the Housing Element Update, and would ensure this potential impact would be less than significant.

Therefore, based on the above uniformly applied fire protection/EMS standards and regulations and the County's continued commitment to providing adequate fire/EMS service, no new or physically altered facilities would be needed; therefore, Project impacts on fire protection/EMS demands are considered ***less-than-significant***.

**Impact 17-2: Increase in Police Service Demands.** *[Threshold of Significance (a)]* As discussed in Section 17.1.2, Police Protection, the Marin County Sheriff's Office staff includes 314 full-time equivalent personnel (202 sworn and 112 civilian professionals). Based on Census population data (population 254,441) this generally corresponds to a ratio of .79 officers per 1,000 residents and 0.44 civilian professionals per 1,000 residents.

Individual housing project proposals under the Project would be subject to review and approval by the Marin County Sheriff's Office, based on uniformly applied standards and regulations. As part of the standard development review process for each individual project proposal, the police services would determine the ability of the department to provide services and would make project-specific recommendations to maintain acceptable levels of service. Without County approval of police service provisions, proposed project(s) would not receive a building permit or occupancy permit, depending on the specific police protection/security issue (e.g., security lighting, parking area security provisions, public visibility/defensible space – "eyes on the street" or, in the case of new parks and plazas, "eyes on the park").

The Project does not propose new or expanded police facilities. Future development projects associated with implementation of the Housing Element Update would result in an incremental increase in need for law enforcement services as the County's population grows and the number of residential units increases. It is anticipated that some expanded police services would primarily need additional equipment (e.g., radios and patrol cars) and additional personnel staffing to address the increase in demand. Any decision whether to build a new facility or expand an existing facility would be the responsibility of the County Board of Supervisors.

Demand for additional police personnel or equipment resulting from Project implementation would be funded by established County budget review and allocation. Any potential future need for a separate development impact fee for police services is a policy issue under the purview of the County Board of Supervisors. Under CEQA, impacts on police service demands resulting from the Project are considered ***less-than-significant***.

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**Impact 17-3: Impacts on Public Schools.** *[Threshold of Significance (a)]* Public school services in the unincorporated county are coordinated by the Marin County Office of Education (MCOE). Based on the MCOE student generation rate of 0.2 (Table 17-3) and total Project development potential of 5,214 housing units, the Project could generate up to approximately 1,043 new students in district schools incrementally until 2031, which is the buildout timeframe of the Project.<sup>15</sup>

This increase in potential students would result in an increased demand for school services that could exceed existing public school capacity and may require consideration of additional facilities, the construction of which could cause adverse affects to the environment. The uncertain distribution of potential new housing in any individual school district limits identification

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<sup>15</sup>5,214 units x 0.2 students/unit = 1,043 students.

of school facility needs. However, the CWP contains policies that, in conjunction with the mitigation measures in this EIR, would ensure that construction-related impacts from new school construction due to the Project is less-than-significant.

In addition, the Leroy F. Greene School Facilities Act of 1998 (“SB 50”) preempts local jurisdictions from devising their own requirements to mitigate or otherwise address impacts of new development on school facilities. No additional mitigation for impacts on school facilities may be required, and the project may not be denied due to impacts on schools or due to the inadequacy of school facilities. The fees are to be used for modernization, construction, and/or expansion of the District’s school sites. Under State law the payment of SB 50 fees constitutes adequate mitigation of school facility impacts. Thus, local jurisdictions are highly unlikely to find any permissible reason to reject an application because of its impacts on school facilities. However, other potential impacts related to school facilities preempted by SB 50 such as traffic congestion or construction noise may be analyzed under CEQA.

Although impacts on individual school facilities would depend on the timing of development and associated occupancy rates, enrollment growth associated with development in the unincorporated county could lead to school capacity concerns.

New or physically altered school facilities determined to be necessary by the Marin County Board of Education to accommodate students generated by future development under the Project could cause significant environmental impacts; however, any school district proposal for a new school or expansion of existing schools would be subject to its own evaluation under CEQA, which would be expected to involve an evaluation of environmental impact topics similar to that provided in this EIR, such as construction period dust control and air emissions, ground-disturbance impacts on special-status species and tree removal, impacts on potentially historic structures or cultural resources, erosion control measures, and other environmental evaluations required under CEQA. If a new school or school expansion is proposed the school district would be the CEQA lead agency and would conduct the CEQA review for the project and prepare any additional evaluation requirements as required by State codes (e.g., Education Code, California Code of Regulations, Public Resources Code) and California Department of Education policies.

The possibility of the creation of further school facilities would require a school district to secure adequate space in the county for possible building expansion or new buildings, and initiate the development process. “Physically altered” facilities means that a school district would expand an existing school on-site. In addition, the potential increase of new students would be expected to occur over the course of Project implementation, during which the districts would levy school impact fees on new development to assist in funding future school facility needs. New development in the county would be required to pay the State-authorized school impact fees approved by the County, the local school districts, and the Marin County Board of Education. Pursuant to Section 65995(h) of the California Government Code (Senate Bill 50), the payment of statutory school impact fees *“...is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization....”* Therefore, impacts to schools from the Housing Element Update would be considered **less-than-significant**.

**Impact 17-4: Impacts on Parks and Recreational Facilities.** *[Threshold of Significance (a)]*

The total development potentially facilitated by the Project is 5,214 housing units, which would result in a population increase of approximately 12,566 new residents. These residents would be expected to increase demand for parks and recreational facilities. Based on compliance with the Subdivision Map Act, Government Code Section 66477(a)(2), 3 acres of land for each 1,000 persons residing within the county shall be devoted to neighborhood and community park and recreational purposes.<sup>16</sup> New county residents could therefore result in a need for new parkland. Accordingly, to continue meeting the 3.0 acres per 1,000 residents Quimby Act standard, the County Code (see “Marin County Code/ County Code Chapter 22.98.040,” above) would require additional developed parkland or to provide appropriate in-lieu of fees. New residential development facilitated by the Project would be subject to the County’s adopted in-lieu park fee and would be required to pay a park fee and/or dedicate land for park development.

The requirements of the County Code will ensure that future residential projects meet dedication requirements through the development review process. Parkland, as required, must be included as part of a project’s “land use plan” with the location identified on the project site. A project that does not comply with the parkland dedication requirement would not be approved. Mandatory future development of parkland and open space in the county plus individual project payment of County adopted in-lieu park fees and/or dedication of parkland would ensure that impacts on parks and recreational facilities would be ***less-than-significant***.

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**Impact 17-5: Impacts on Other Public Facilities.** *[Threshold of Significance (a)]* The Project-facilitated increase in residential development in the county would result in a corresponding incremental increase in demand for other public, municipal services (e.g., libraries). Any development plans for increased public facilities needs would be subject to discussions between the County and a future project applicant. Any future facility proposal would be subject to its own evaluation under CEQA. Therefore, this impact would be ***less-than-significant***.

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**Impact 17-6: Increase the use of existing neighborhood and regional parks.** *[Threshold of Significance (b) and Threshold of Significance (c)]* The total development potentially facilitated by the Project is 5,214 housing units, which includes the required 3,569 RHNA units, plus a California Department of Housing and Community Development-recommended buffer plus potential density bonus units. This potential increase in housing would result in a population

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<sup>16</sup>Marin County Code – Title 22, Development Code VI-1 Article VI Subdivisions, 22.98.040 – Parkland Dedications and Fees, [https://library.municode.com/ca/marin\\_county/codes/municipal\\_code?nodeId=TIT22DECO\\_ARTVISU\\_C\\_H22.98DEREEA](https://library.municode.com/ca/marin_county/codes/municipal_code?nodeId=TIT22DECO_ARTVISU_C_H22.98DEREEA), Accessed 8/9/2022.

increase of approximately 12,566 new residents.<sup>17</sup> This population increase would add to the use of parks and recreational facilities; however, it is not anticipated that this increase would lead to a substantial physical deterioration of these facilities that would not be mitigated by in-lieu park fees, or the required development of additional parkland, as discussed above in relation to impacts on parks and recreational facilities (see Impact 17-4). In addition, any potential future need for additional facilities would be required to implement County standards of construction to avoid negative physical environmental effects. The impact would be ***less-than-significant***.

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**Construction Period Impacts.** Although no need for new or physically altered public facilities has been identified at this time, a need for new facilities may be identified in the future. Potential future construction of Project-related firefighting, police, school, park, or other public facilities would be temporary and would be conducted consistent with all County plans, policies, and regulations that regulate environmental impacts. No additional significant environmental impact is anticipated due to potential future construction activity beyond those impacts already identified in this EIR.

Implementation of uniformly applied Marin County construction standards and regulations would ensure that construction period impacts associated with public services and recreation would be ***less-than-significant***.

### **Cumulative Public Services and Recreation Impacts**

The proposed Project has limited impacts related to the public services included in this chapter: Fire and Emergency Services, Police Services, Schools, Parks and Recreational Facilities, and Other Public Facilities. As discussed in the preceding impact sections, the impact of the proposed Project would be less-than-significant and would be evaluated for specific sites at the time that development of the housing facilitated by the Project is proposed. In addition, Policy EHS 2.4 Effective Emergency Access and Evacuation, Implementing Program EHS-4.6.a, Protect and Ensure Continued Operation of Critical Public Facilities, Policy EHS 2.5 Provide Adequate Services exist as part of the proposed Project to ensure that the public services provided by the County remain adequate to serve the current and projected population of the County.

No cumulatively considerable contribution to a significant cumulative impact has been identified; therefore, the cumulative impact would be ***less-than-significant***.

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<sup>17</sup>As discussed previously, according to the U.S. Census Bureau, the County has an average unit occupancy of 2.41 persons; therefore a potential buildout of 5,214 new residential units would be expected to generate approximately 12,566 new County residents (5,214 units X 2.41 persons/unit = 12,566 persons).

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## 18. TRANSPORTATION

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Transportation. Would the project:</b>				
a) <i>Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?</i>			X	
b) <i>Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?</i>	X			
c) <i>Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?</i>			X	
d) <i>Result in inadequate emergency access?</i>			X	

This chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts.

### 18.1 ENVIRONMENTAL SETTING

#### 18.1.1 Project Area

Marin County is located along the Pacific coast, north of San Francisco and south of Sonoma County. It is bounded on the west by the Pacific Ocean and on the east by the San Francisco and San Pablo Bays. US 101 is a major freeway that functions as the primary north-south route through the county, connecting Marin's major population centers to destinations to the south (including San Francisco) via the Golden Gate Bridge, as well as Sonoma County and northern California to the north. State Route (SR) 1 provides access along much of Marin County's coastline, connecting smaller coastal area communities to US 101 near Tamalpais Valley, and points north in Sonoma County near Tomales. Other key roadway connections to adjacent jurisdictions include I-580, which provides access between Marin County and the East Bay via the Richmond-San Rafael Bridge, and SR 37, which links Novato to Sonoma, Napa, and Solano Counties to the east.

#### 18.1.2 Housing Sites

As described in Chapter 3, Project Description, of this EIR, candidate housing sites are dispersed throughout the unincorporated County of Marin. Including potential accessory dwelling units (ADUs) as well as potential units associated with State Density Bonus provisions, the combined candidate sites could accommodate a total of 10,993 potential new residential

<sup>1</sup>State CEQA Guidelines, Appendix G, item XVII (a through d).

units. These candidate sites and associated 10,993 units are evaluated in the transportation analysis. All candidate sites were analyzed to conservatively assess worst-case Vehicle Miles Traveled (VMT) and traffic volume projections, which affect EIR topic areas in addition to transportation (including air quality, noise, and greenhouse gases). The smaller grouping of analyzed sites that constitute the “Project” could accommodate up to 5,214 potential units, and are assessed using information extracted from the analysis of all candidate sites. While this “Project” analysis is discussed qualitatively, it is substantially informed by the quantitative modeling conducted for the broader candidate site inventory.

### **18.1.3 Scope of Transportation Analysis**

The transportation analysis used in this chapter to satisfy the requirements of CEQA was prepared by W-Trans with modeling support provide by Kittelson & Associates. The programmatic nature of the Housing and Safety Elements Update was recognized in preparing the analysis, including assessments of whether the update would conflict with adopted plans or policies addressing the circulation system (transit, roadway, bicycle, and pedestrian facilities); result in hazards due to geometric design features; or result in inadequate emergency access. As required by the State CEQA Guidelines, the primary determinant of significance related to transportation impacts is VMT, which in this EIR is quantitatively assessed. As described below, this focus on VMT is a relatively recent change in CEQA, and relevant in that it has replaced the level of service (LOS) metric that had previously been used.

Historically, the transportation impacts of land development and transportation projects were evaluated based on a congestion-focused metric referred to as Level of Service (LOS), which is generally tied to the average delays that drivers experience. In 2013, Governor Brown signed SB 743, requiring amendments to the State CEQA Guidelines for analyzing transportation impacts. Through this action, Public Resources Code Section 21099 (b)(1) directed the California Governor’s Office of Planning and Research (OPR) to prepare updated State CEQA Guidelines for adoption by the Natural Resources Agency, including revised transportation significance criteria. PRC Section 21099 (b)(2) further specifies that upon certification of the updated CEQA guidelines, “automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment.” The use of VMT as a CEQA significance threshold became mandatory on July 1, 2020. Accordingly, consistent with the requirements set forth in SB 743 and current State CEQA Guidelines, the transportation analysis completed for the Housing and Safety Elements Update focuses on the analysis of VMT rather than LOS.

### **18.1.4 Existing and Planned Transportation Network**

#### **Roadway Network**

##### *Major Highways:*

- **US 101** is Marin County’s primary north-south highway, connecting to San Francisco via the Golden Gate Bridge and to Sonoma County in the north. It has between two and five lanes in each direction, with HOV lanes between Marin City and Novato. US 101 provides access to Marin’s most densely developed communities including the incorporated cities of Novato, San Rafael, and Mill Valley. US 101 provides connections to other regional and local-serving roadways including I-580, SR 37, Sir Francis Drake Boulevard, and other major arterial corridors that link to West Marin, the East Bay, and other North Bay jurisdictions.



- **I-580** links the US 101 corridor to the East Bay via the Richmond-San Rafael Bridge, connecting to I-80 in El Cerrito. Within Marin County, it has two travel lanes in each direction, with the addition of a third eastbound lane on the bridge during evening commute hours. In 2019, a bicycle-pedestrian path was established along the north side of the upper bridge deck by installing a concrete barrier to provide protection from vehicle traffic; the path is scheduled to remain in place as a pilot through 2024.
- **State Route (SR) 1**, also called Shoreline Highway, is a two-lane highway that serves as the primary north-south travel route through coastal communities in West Marin. To the north, SR 1 provides connectivity along the coast into Sonoma County, while further south it connects to US 101 near Tamalpais Valley. The speed limits vary from 25 mph in more densely developed communities to 55 mph in rural areas.
- **SR 37** connects the US 101 corridor and Novato with points further east, including Sonoma, Napa, and Solano Counties. SR 37 carries two lanes of traffic in each direction within Marin County but narrows to one lane in each direction east of SR 121 in Sonoma County.
- **SR 131**, known as Tiburon Boulevard, runs northwest-to-southeast between US 101 and the Town of Tiburon. It is a four-lane highway between US 101 and Trestle Glen Boulevard and is two lanes between Trestle Glen Boulevard and the end of its state highway designation at Paradise Drive. SR 131 terminates in the main commercial area in the Town of Tiburon, which includes a ferry terminal. The speed limit ranges from 30 to 45 mph, and the segment from Mar West Street to Paradise Drive, which has two to four lanes, includes a median.

### *Arterials*

- **Sir Francis Drake Boulevard** is one of the major roadways connecting US 101 to West Marin, passing through numerous communities from I-580 near the Richmond-San Rafael Bridge to SR 1 and the Point Reyes peninsula. It primarily runs east-west, with three lanes of traffic in each direction between Larkspur and Greenbrae, and two lanes from Greenbrae to Kentfield and from San Anselmo to Fairfax; all other segments consist of one lane in each direction.
- **Novato Boulevard** is a major arterial connecting US 101 to Central and West Marin County. The corridor's busiest segments are within the City of Novato; to the west of Novato the corridor includes one lane in each direction and has posted speed limits of 45 or 50 mph.
- **Atherton Avenue** provides access to a portion of the City of Novato as well as unincorporated residential areas to the east. The corridor runs between US 101 in northern Novato to SR 37 in the Black Point area, and includes one lane in each direction with posted speed limits of 40 or 45 mph.

A map of key roadway and transportation facilities in the County is shown in Figure 18-1.



*Planned Roadway Network Improvements:*

The *Getting Around Marin Strategic Vision Plan*, Transportation Authority of Marin (TAM), 2017, serves as a long-range planning document including a framework for funding and implementing future transportation improvements in Marin County, and identifies the following major roadway projects in areas where the project's potential housing sites are located.

- **Marin/Sonoma Narrows:** The segment of US 101 between the Sonoma-Marin county line and Novato is the last component of the Caltrans Marin/Sonoma Narrows Widening project, and will add new high occupancy vehicle (HOV) lanes. Construction is anticipated to be complete by late 2024.
- **US 101/Interstate 580 Interchange:** The plan identifies the need to construct a direct freeway ramp connection between US 101 North and I-580 while making interim improvements to the segments of Sir Francis Drake Boulevard and Bellam Boulevard that currently serve these flows. Alternatives are being developed through the Northbound US 101 to Eastbound I-580 Direct Connector study, which is a collaborative effort between TAM, the City of San Rafael, and the City of Larkspur. Pending conclusion of this process, design efforts, and identification of funding, the project has a preliminary timeline for completion of 2030.
- **SR 37:** Improvements will be needed to protect the corridor from sea level rise, with the potential to increase traffic capacity through various widening strategies. Caltrans has initiated work on the "Resilient SR 37" multi-jurisdictional effort that will help determine the future of the corridor.

The *2007 Marin Countywide Plan* identifies planned transportation improvements throughout the County. Following is a list of key transportation improvements in the project area that have not yet been completed.

- New southbound auxiliary lanes on US 101 from Miller Creek Road to Manuel T. Freitas Parkway and from Manuel T. Freitas Parkway to North San Pedro Road.
- Construct new westbound I-580 to southbound US 101 freeway ramp and improvements at the I-580/Bellam Boulevard interchange.
- Consider expansion of I-580 to three westbound lanes from the Richmond-San Rafael Bridge to Sir Francis Drake Boulevard.
- Improve US 101 operations from Sir Francis Drake Boulevard to the Tamalpais Drive interchange, including consideration of auxiliary lanes such as Paradise Drive to Lucky Drive.
- Improve Tiburon Boulevard, including a freeway overcrossing with an additional eastbound lane between the US 101 South ramps and Strawberry Drive, and further improve pedestrian and bicycle facilities in the interchange area.
- Work to lessen traffic congestion on SR 1 between Flamingo Road and US 101, and complete safety upgrades at the Tennessee Valley (Coyote Creek) Bridge.

B. Pedestrian Facilities. Pedestrian facilities include components such as sidewalks, trails, crosswalks, pedestrian signals, and pedestrian crossing warning devices. In more urbanized areas of unincorporated Marin County, such as the Strawberry area, neighborhoods abutting northern San Rafael, near major destinations such as the College of Marin, and in smaller town centers such as Point Reyes Station, networks of sidewalks, paths, and crosswalks are typically available to accommodate pedestrian travel, though it is not uncommon to encounter areas with sidewalk gaps. Fewer facilities are available in more rural areas where the number of pedestrians is lower and sidewalks would be inconsistent with the area's character.

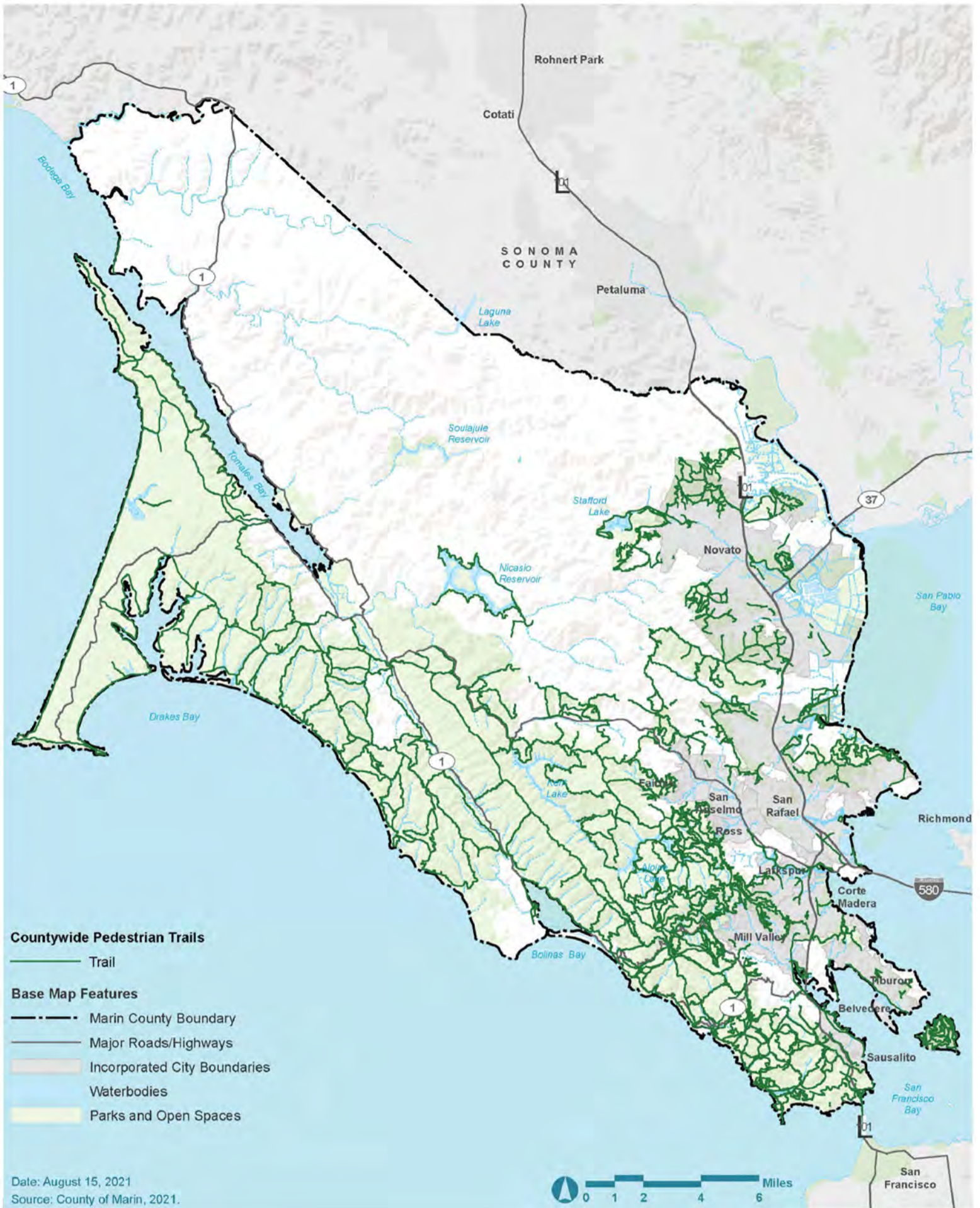
Sidewalks are in place in almost all recently built developments. Other locations, such as along SR 1 in Tamalpais Junction, have been retrofitted to enhance pedestrian access. Beyond more urbanized areas, pedestrian facilities are often limited to trails (both improved and unimproved) and paved shoulders along roadways, while in some locations no pedestrian facilities are available. Some trails such as the North-South Greenway are paved and serve major destinations throughout Marin County's incorporated and unincorporated areas. However, most of the trail network is unpaved and located within protected open space areas, and therefore functions primarily as a recreational system. Barriers to pedestrian travel include freeways and higher-speed arterials and highways, as well as geographic and/or topographic features. A map of trails in the area is presented as Figure 18-2.

C. Bicycle Facilities. The *Highway Design Manual*, Caltrans, 2020, classifies bikeway facilities into five categories:

- Shared Roadway (No Bikeway Designation) – no bikeway signage or striping is provided, although treatments such as edgeline striping and shoulders may be provided to enhance bicyclist access and safety.
- Class I Multi-Use Path – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- Class II Bike Lane – a striped and signed lane for one-way bike travel on a street or highway.
- Class III Bike Route – signing only for shared use with motor vehicles within the same travel lane on a street or highway.
- Class IV Bikeway – also known as a separated bikeway, a Class IV Bikeway is for the exclusive use of bicycles and includes a separation between the bikeway and the motor vehicle traffic lane. The separation may include, but is not limited to, grade separation, flexible posts, inflexible physical barriers, or on-street parking.

The *Marin County Unincorporated Area Bicycle and Pedestrian Master Plan*, 2018, includes the following facility recommendations:

- North-South Greenway – Ultimately connecting the Golden Gate Bridge to Cloverdale in Sonoma County, the North-South Greenway generally follows the alignment of the former Northwestern Pacific Railroad. Within Marin County, it includes the SMART multi-use path from Larkspur to Novato. Other proposed improvements along the North-South Greenway include a path through the Alto Tunnel connecting Corte Madera to Mill Valley.



**Figure 18.2 - Countywide Trails**  
Marin County Housing and Safety Elements Environmental Impact Report

- Marin County's "widen where feasible" program – Due to the cost and environmental constraints, provision of bicycle facilities or shoulders on many roadways is not feasible. To provide facilities in priority locations in a cost-effective manner, the County has instituted an ongoing program to add or widen shoulders on designated roadways as part of resurfacing projects where additional improvements such as retaining walls or drainage modifications are not necessary. Such improvements are seen as an interim measure until more comprehensive shoulder improvements can be undertaken.
- San Francisco Bay Trail – With a long-term vision as a 500-mile-long Class I path along the bay shoreline, the Bay Trail alignment traverses all nine Bay Area counties. In Marin County, the Bay Trail includes the existing paths along the Golden Gate Bridge and Richmond-San Rafael Bridge, as well as a proposed path along the SR 37 corridor.

A map showing the Countywide Bicycle Network is provided in Figure 18-3.

The *Caltrans District 4 Bike Plan (2018)* includes recommendations for facilities to enhance bicycle safety and access along and across state highway facilities. It identifies the following planned future improvements on Caltrans facilities that are in the vicinity of potential Housing Element sites.

- US 101/SR 131 (Tiburon Boulevard-E. Blithedale Avenue) interchange: as part of a full interchange reconstruction provide a Class I or IV bikeway.
- US 101/North San Pedro Road interchange: eliminate free-flow ramps and provide Class I bike lanes through interchange.
- US 101/SR 1 (Shoreline Highway) interchange: along with minor ramp reconfigurations, provide signing and striping to improve bicycle circulation.
- SR 1 from Dillon Beach Road to Point Reyes-Petaluma Road and from Sir Francis Drake Boulevard to US 101: widen where feasible to provide additional shoulder area for bicyclists as proposed by *Marin County Bicycle and Pedestrian Plan*.
- SR 1 from Point Reyes-Petaluma Road to Bear Valley Road: provide a combination of Class I paths and Class II bike lanes as proposed by the *Marin County Bicycle and Pedestrian Plan*.

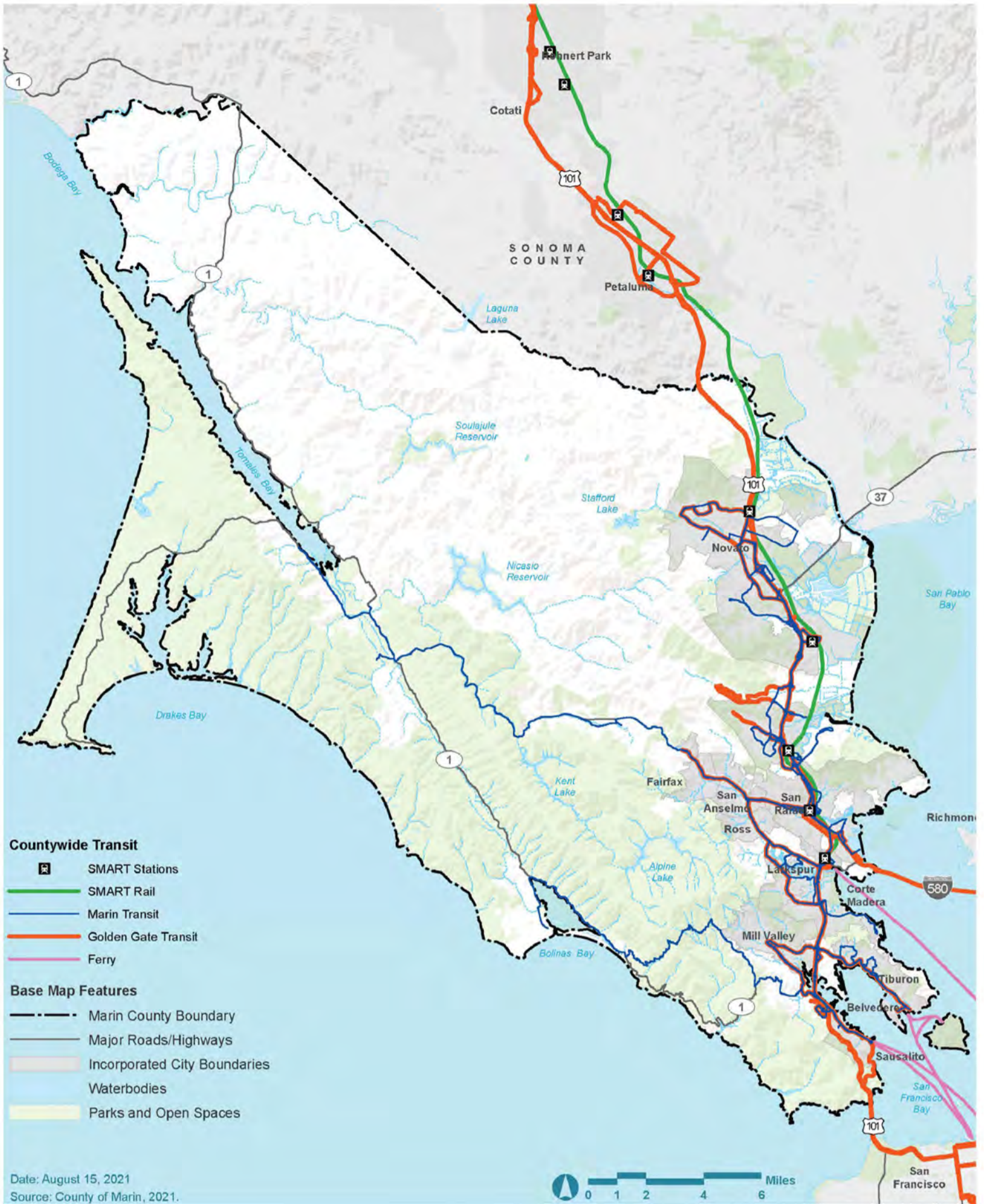
D. Transit Facilities. Marin County is served by several modes of public transportation, including commuter rail, regional and local buses, and ferries, as described below. Bus routes, rail stations, and ferry terminals are shown in Figure 18-4.

### **SMART Commuter Rail**

The Sonoma-Marín Area Rail Transit (SMART) commuter rail system currently operates between San Rafael and the Sonoma County Airport, with plans to extend the line as far north as Cloverdale. SMART serves six stations in Marin County. While service was reduced in response to the COVID-19 pandemic, as of June 13, 2022, the schedule included 18 round-trip trains on weekdays and six round-trip trains on Saturdays and Sundays. Typical headways during the weekday morning and evening commute periods are 30 minutes, with longer headways during midday, late evening, and weekend periods.



**Figure 18.3 - Countywide Bicycle Network**



**Figure 18.4 - Countywide Transit Network**



TAM has a partnership with Lyft that provides a discount of up to five dollars off rides to and from a SMART station and destinations within Marin through a mobile ridesharing app.

### **Golden Gate Transit**

Golden Gate Transit provides regional bus service to locations in Marin County, with connections to San Francisco, Sonoma County and the East Bay. Regional Routes 101, 130, and 150 link North Bay communities to San Francisco along the US 101 corridor, terminating in Santa Rosa, San Rafael, and Novato, respectively. Route 101 operates approximately every 30 to 60 minutes on weekdays and hourly on weekends and holidays, while the other regional routes operate hourly. Express bus commuter service to South of Market in San Francisco is available during weekday peak commute hours from Novato, Mill Valley, and San Anselmo. Route 580 provides service between San Rafael and the El Cerrito del Norte BART station in the East Bay, operating daily on 60-minute headways.

Many Golden Gate Transit bus stops include bicycle racks. Up to three bicycles can be accommodated on buses.

### **Marin Transit**

Marin Transit provides several types of transit service within Marin County, generally providing more locally focused transportation routes than Golden Gate Transit and allowing for connections to the Golden Gate Transit regional routes, SMART, and Golden Gate Ferry services. Marin Transit vehicles also support use of bicycle transportation, as all vehicles include racks that can accommodate at least two bikes.

Marin Transit offers 16 local routes, primarily between and within communities along the US 101 corridor, with 14 of the routes including connections to downtown San Rafael. All local routes provide a lift or wheelchair ramp and can accommodate at least two wheelchairs.

Service to the western parts of the County is provided through three West Marin Stagecoach routes, two of which operate between Sausalito and Bolinas via SR 1, while the third links San Rafael and Inverness along the Sir Francis Drake Boulevard corridor. Marin Access Paratransit eligible riders may request a deviation from the route of up to three-quarters of a mile, with the exception of weekend trips on Route 61. The West Marin Stagecoach routes can accommodate at least one wheelchair per vehicle.

Marin Transit also operates eight supplemental routes. While the schedules and routes are designed primarily to serve schools, these services are open to the general public.

### **Marin Transit Connect**

Operating as a pilot service since 2018, Marin Transit Connect is an accessible, on-demand micro-transit service. Riders may begin and end their trip anywhere within the service area, which is within approximately 2.5 miles of any SMART station, the Larkspur Ferry Terminal, or seven bus hubs within central and northern Marin County. Vans can accommodate up to five passengers, one wheelchair, and up to two bicycles. Marin Connect operates on weekdays from 6 a.m. to 7 p.m., and rides can be requested through the Uber app or by phone.

### **Marin Access Paratransit**

Marin Access Paratransit offers a dial-a-ride, door-to-door, shared service for people with disabilities who are unable to use Marin Transit or Golden Gate Transit fixed route transit service. Paratransit operates within three-quarters of a mile of fixed route service during the same hours of operation.

### **Marin Catch a Ride**

Marin Catch a Ride is a discount taxi program overseen by Marin Transit that offers discounted rides by taxi and other licensed vehicles for people at least 80 years old, 60 and unable to drive, or who are eligible for ADA paratransit service.

### **Golden Gate Ferry**

Golden Gate Ferries operate services between San Francisco and Marin County through ferry terminals at Larkspur, Tiburon, and Sausalito. On weekdays, there are nine ferries inbound and 10 outbound ferries between Larkspur and San Francisco, with seven inbound and six outbound on the Sausalito route and seven in each direction on the Tiburon route. More limited service is provided on weekends and holidays, with five round trips on the Larkspur and Sausalito ferries, and three inbound and four outbound trips on the Tiburon service.

## **18.2 REGULATORY SETTING**

### **18.2.1 State Laws and Regulations**

**Senate Bill 743.** SB 743, signed into law in 2013, required CEQA lead agencies to shift away from using traditional congestion-based level of service (LOS) standards and automobile delay to determine significant traffic impacts. As a result of SB 743, the State CEQA Guidelines have been updated to reflect Vehicle Miles Traveled (VMT) as the primary metric for evaluating transportation impacts. Pursuant to Public Resources Code Section 21099(b)(2), “automobile delay, as described solely by level of service of similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment.” The *Technical Advisory on Evaluating Transportation Impacts in CEQA*, California Governor’s office of Planning and Research (OPR), December 2018, referred to herein as the “OPR Technical Advisory,” provides details on VMT assessment, methodologies, and suggested metrics. It is important to note that while jurisdictions including the County of Marin and Transportation Authority of Marin may continue to maintain LOS standards, effects on LOS are no longer considered an environmental impact under CEQA.

**California Department of Transportation (Caltrans).** Caltrans has not established formal VMT significance thresholds, although in May 2020 they released the *VMT-Focused Transportation Impact Study Guide* (TISG) that refers to guidance provided in the OPR Technical Advisory, which recommends VMT per capita thresholds 15 percent below existing city or regional levels. The Caltrans TISG also refers to OPR Technical Advisory guidance on the types of projects that can be presumed to have a less-than-significant transportation impact. The TISG reiterates that automobile delay is no longer considered a significant impact on the environment within CEQA transportation analysis, indicating that the agency’s Local Development-Intergovernmental Review (LD-IGR) program will focus on VMT consistent with the State CEQA Guidelines.

### 18.2.2 Regional Regulations

**Transportation Authority of Marin (TAM).** TAM is designated as the congestion management agency for Marin County. TAM is responsible for managing a variety of transportation projects and programs in Marin County, receiving federal, State, regional, and local funds, and working closely with all eleven cities and towns as well as the County. The 2019 Congestion Management Program (CMP) Update adopted by TAM specifies PM peak hour level of service criteria for a number of facilities including the following roadways that could be affected by the proposed Project:

- US 101
- I-580
- SR 37
- SR 1 (Shoreline Highway)
- SR 131 (Tiburon Boulevard)
- Novato Boulevard and South Novato Boulevard
- Sir Francis Drake Boulevard
- Red Hill Avenue
- Second Street (in the City of San Rafael)
- Third Street (in the City of San Rafael)
- Bridgeway

The CMP requires local governments to inform TAM about any general plan updates or amendments. If any such update is projected to generate a net increase of 100 vehicle trips during the p.m. peak hour, it is subject to a CMP analysis to assess potential traffic impacts on the designated CMP roadway network.

On April 28, 2022, the TAM Board of Commissioners unanimously directed TAM staff to initiate the process of opting out of the CMP and focus future efforts on the development of a Comprehensive Transportation Plan. The Marin County Board of Supervisors voted to support TAM's recommendations to opt out of the CMP on August 9, 2022, and as of August 2022, TAM had received formal support to opt out from jurisdictions representing more than half of the County's total population. With this change, CMP requirements pertaining to analysis of consistency with LOS-based metrics will no longer apply. One of the reasons cited by TAM for this change is to address inconsistencies with CEQA, which no longer considers traffic congestion (as measured by LOS) to constitute a significant environmental impact, instead requiring assessment of VMT.

### 18.2.3 Local Regulations

**Marin Countywide Plan.** The 2007 Marin CWP addresses transportation and circulation needs for the unincorporated County of Marin. The CWP policies and implementing programs that are relevant to the Housing and Safety Elements Update include:

#### **Built Environment Element –Transportation policies**

- Policy TR-1.1 Manage Travel Demand. Improve the operating efficiency of the transportation system by reducing vehicle travel demand and provide opportunities for other modes of travel. Before funding transportation improvements consider alternatives — such as Transportation Demand Management (TDM) — and prioritize projects that will reduce fossil fuel use and reduce single-occupancy vehicle trips.
- Policy TR-1.2 Maintain Service Standards. Establish level of service standards for vehicles on streets and highways and performance standards for transit, bicycles, pedestrians, and other modes of transportation.
- Policy TR-1.5 Require Necessary Transportation Improvements. Require necessary transportation improvements to be in place, or otherwise guaranteed to result in their timely installation, before or concurrent with new developments. In evaluating whether a transportation improvement is necessary, the County shall consider alternatives to the improvement consistent with Policy TR-1.1, Manage Travel Demand, and the extent to which the improvement will offset the traffic impacts generated by proposed and expected development and restore acceptable traffic levels of service.
- Policy TR-1.6 Keep Rural Character in West Marin. Maintain roads in West Marin as two-lane routes, with the possible additions of bicycle lanes, turn lanes at intersections, and turnouts for slow-moving traffic.
- Policy TR-1.8 Reduce Vehicle Miles Traveled (VMT). Reduce the rate of increase for total vehicle miles traveled by single-occupant automobile to not exceed the population growth rate.
- *Implementing Program TR-1.e Uphold Vehicle Level of Service Standards.* Uphold peak-hour vehicle Level of Service standard LOS D or better for urban and suburban arterials and LOS E or better for freeways and rural expressways. Only the Congestion Management Program–specified roadway and highway segments operating at a lower LOS than the standard in 1991 are grandfathered and may continue to operate at the lower LOS standard until such time as the roads are improved or the traffic load or demand is reduced or diverted. An improvement plan should be developed for Highway 101 and the grandfathered roadway segments to address existing deficiencies. Unless determined to be infeasible, alternatives that reduce fossil fuels and single occupancy vehicle use should be considered a priority over infrastructure improvements such as road widening. New development shall be restricted to the lowest end of the applicable residential density/commercial floor area ratio range where the LOS standards will be exceeded at any intersection or road segment or worsened on any grandfathered segment. Densities higher than the low end of the applicable residential density/commercial floor area ratio may be considered for the following:

- Development that qualifies as Housing Overlay Projects in accordance with Policy CD-2.3, Establish a Housing Overlay Designation, and Program CD-2.d, Implement the Housing Overlay Designation.
- Mixed-use projects developed in accordance with Policy CD-8.7.
- Second units developed pursuant to State law.
- New housing units affordable to very low and low income households.

All projects shall be conditioned to include feasible mitigation measures for project-related traffic impacts.

- *Implementing Program TR-1.f Analyze Multimodal Performance.* Develop methods and adopt standards to assess the performance of pedestrian, bicycle, and transit facilities, and measure the success of those components against the goals of the County Transportation Vision.
- *Implementing Program TR-1.g Determine Appropriate Mitigation.* Work with the Transportation Authority of Marin to monitor the traffic impacts of development and identify mitigation requirements for proposed development that would cause a drop below adopted LOS, including transportation system improvements, impact fees, Transportation Demand Management strategies, direct support of alternative travel modes, or redesign of the development projects for transportation improvements. Amend the Development Code to incorporate those requirements. Require the preparation of a traffic impact analysis report to identify impacts and mitigation measures for projects that may result in significant traffic impacts.
- *Implementing Program TR-1.o Keep West Marin Rural.* Limit West Marin roads to two lanes, and work with State and federal agencies and local communities to enhance road safety, improve pedestrian, bicycle, and transit access, and maintain or reduce congestion through means such as limiting local parking, creating a multipurpose path from West Marin to the City-Centered Corridor, and providing shuttle service to popular destinations. Shoulder widening for bicycles, turn lanes at intersections, turnouts for slow-moving traffic, traffic calming measures, and similar improvements would be permitted. However, projects will not be undertaken to increase the motorized vehicular capacity of West Marin roads.
- *Implementing Program TR-1.s VMT Reduction Monitoring and Implementation and Transportation Demand Management Program.* Develop and implement a countywide program for monitoring and reducing VMT consistent with State and regional efforts and based on information from State and regional planning agencies. Identify and require in new developments specific transportation demand management (TDM) strategies for reducing the VMT below levels that would otherwise occur. Consider the following types of strategies for inclusion in the VMT Reduction Monitoring and Implementation and Transportation Demand Management Program:
  - Increased transit.
  - All new residential projects consisting of 25 units or more should be located within 1/2 mile of a transit node, shuttle service, or bus route with regularly scheduled, daily service.

- New multi-family projects consisting of 25 units or more should include TDM measures, such as reduced parking for affordable or senior projects, subsidized public transportation passes, or ride-matching programs, based on site-specific review. For market-rate projects, consider TDM programs such as charging parking fees separate from rent.
- Safe, convenient connections should be provided to existing pedestrian and bicycle facilities, and secure bicycle parking should be provided in new nonresidential developments.
- TDM should be required for new or expanded projects with 50 employees or more, including programs such as parking cash out, subsidized transit passes, ridesharing incentives, and bicycle storage facilities.
- *Implementing Program TR-1.t Reduce Single Occupancy Trips.* Adopt fees and other programs that encourage alternatives to the single occupant vehicle. Consider imposing tolls, congestion pricing, parking fees, gas taxes, and residential parking permit limits. Encourage and assist local cities and towns to adopt similar programs.
- *Implementing Program TR-1.u Create Car Share Program.* Support the establishment of a “Car Share” program to promote socially responsible car sharing by providing convenient, reliable, and affordable access to cars to reduce individual car ownership.
- *Policy TR-2.1 Improve the Bicycle and Pedestrian Network.* Promote adequate bicycle and pedestrian links, to the extent feasible, throughout the county, including streetscape improvements and standards that are safe and pedestrian and bicycle friendly.
- *Policy TR-2.2 Provide New Bicycle and Pedestrian Facilities.* Where appropriate, require new development to provide trails or roadways and paths for use by bicycles and/or on-street bicycle and pedestrian facilities. In-lieu fees may be accepted if warranted in certain cases.
- *Implementing Program TR-2.a Encourage Bicycling and Walking.* Work with local community groups to encourage bicycling and walking for local trips by students, commuters, visitors, and shoppers through marketing and incentive programs, as well as improved facilities.
- *Implementing Program TR-2.b Adopt Standards for Pedestrian and Bicycle Access.* Amend the County Code and Development Code to include standards for provision of safe pedestrian and bicycle accommodations. Include standards in the design of roadways. As appropriate, require new development and redevelopment projects to address the following: bicycle and pedestrian access internally and to other areas through easements; safe access to public transportation and construction of paths that connect with other nonmotorized routes; safe road crossings at major intersections for school children and seniors; and secure, weatherproof bicycle storage facilities and shower/changing room facilities for bicycle commuters. Ensure that such facilities will have ongoing maintenance.
- *Implementing Program TR-2.c Support Bicycle Stations and Consider Attended Parking.* Encourage the development of bicycle stations, attended parking, and other attended bicycle parking support facilities at intermodal hubs, such as the San Rafael Transit Center, the future Southern Marin transportation hub, the Larkspur Landing Ferry Terminal; at future

SMART rail stations; and for large public events to encourage people to “bike to transit.” Bike stations are full-service bicycle facilities providing secure and guarded “valet” bicycle parking in addition to other possible amenities, such as showers or bicycle rentals and repairs.

- *Implementing Program TR-2.j Ensure Safe Routes to Schools.* As funding permits, continue to work with TAM and local school districts to ensure that children have safe walking and bicycling routes to school. Support TAM’s program to produce Safe Routes to School Plans for the county’s schools providing a required planning basis for the Measure A–financed Safe Pathways County Capital Improvement Program. Continue the TAM-managed Safe Routes to Schools encouragement and education program, which provides bicycle and pedestrian safety training, events, contests, law enforcement, and the identification of potential bicycle and pedestrian transportation improvements.
- *Implementing Program TR-2.k Consider Pedestrian Needs.* Work with local cities and towns to ensure that traffic signals are timed to allow safe and comfortable pedestrian crossing. Work with Caltrans to improve pedestrian access to freeway bus pads along Highway 101. Work with local communities and school districts to maintain and expand the Measure A–funded school crossing guard program.
- *Implementing Program TR-2.l Complete Streets.* Include safe and convenient bicycle and pedestrian access, where feasible, in all transportation improvement projects. Request that Caltrans and the Federal Highway Administration provide separated, safe, and secure bicycle and pedestrian access as part of any roadway or interchange improvement work, and that access for pedestrians and bicyclists be available during construction. Continue to implement the Department of Public Works’ policy on routine accommodation. While the County does not have authority to plan bicycle facilities located in other jurisdictions, it may be appropriate for the Transportation Authority of Marin (TAM) or similar entity or collaboration to assume this responsibility for planning.
- *Policy TR-3.1 Encourage and Support the Expansion of Local Bus and Ferry Services.* Encourage expansion and improvement of local bus and ferry services to all areas of the county.
- *Policy TR-3.3 Develop Mixed-Use Intermodal Hubs.* Support and participate in the development of intermodal transit hubs that expand alternative transportation use.
- *Policy TR-3.5 Support Bicycle Access to All Transit Systems.* Ensure that all new and existing transit systems provide for the storage of bicycles on transit as well as at transit centers.
- *Implementing Program TR-3.e Upgrade and Create Intermodal Hubs.* Work with cities and towns, transit providers, and other agencies to seek funding to upgrade and create intermodal hubs that facilitate seamless connections between transit services; are comfortable and convenient for pedestrians, bicyclists, transit users, and drivers; and, where feasible, provide secure bike parking and other services, such as convenience retail, real-time transit arrival information, way-finding information, short transfer distances, and quality design.
- *Implementing Program TR-3.f Promote Transit-Oriented Development.* Amend the Development Code to encourage compact mixed-use development within one-half mile of

intermodal hubs and future rail stations, and to offer flexible standards for affordable housing to create sufficient ridership to support such uses.

- *Implementing Program TR-3.i Provide Shuttle Service to Transit.* Support the creation of shuttle service, corridor trolleys, and/or jitneys to collect riders for public transit (see AIR-3.1, AIR-4.b). Consider providing such service for inter-city-county streets.

### 18.3 VEHICLE MILES TRAVELED (VMT) METHODOLOGY

This section provides a background on VMT and describes the methodology used to assess the potential VMT impacts that could result from the Housing and Safety Elements Update.

**VMT Background.** VMT represents a number of daily miles driven and can be expressed in different ways including total VMT, which is an aggregate value measured in miles, and VMT per capita, which is a performance metric measured in the number of miles driven per person. Many factors affect VMT including the average distance residents commute to work, school, and shopping, as well as the proportion of trips that are made by non-automobile modes. Areas that have a diverse land use mix and ample facilities for non-automobile modes of travel, including transit, tend to generate lower VMT than auto-oriented suburban areas.

**TAMDM Model.** Forecasts of regional travel by various modes, regional average VMT per capita values are determined using the Transportation Authority of Marin Demand Model (TAMDM). The travel model is a set of mathematical procedures and equations that represent the variety of transportation choices that people make, and how those choices result in trips on the transportation network. The TAM regional travel model is an activity-based model that is a member of the Coordinated Travel – Regional Activity-Based Modeling Platform (CT-RAMP) family of models. TAMDM is nested within the nine-county Bay Area Travel Model Two activity-based model maintained by the Metropolitan Transportation Commission (MTC). The MTC version of the CT-RAMP features a very detailed spatial system including an all-streets transportation network with 4,800 Transportation Analysis Zones (TAZs) and almost 40,000 Micro-Analysis Zones (MAZs) for precise measurements of walking and biking time. The model also utilizes 6,200 transit access points (TAPs) for transit stop-to-stop level-of-service.

The most recently updated version of the TAM regional activity-based travel demand model is used to identify the VMT generated by land uses in Marin County as well as the entire Bay Area region. The TAMDM also includes estimates of VMT for trips traveling to and from land uses within Marin County but with one end of trip outside Marin County, such as the trip between Marin County unincorporated area to Oakland or San Francisco. These “external” trips are estimated based on the census journey-to-work data and captures all passenger, i.e., non-commercial vehicle demand.

For the Marin County Housing Element Update, the 2019 version of the TAMDM that includes the SMART commuter rail service, and the 2040 version that incorporates changes envisioned by long-range land use plans throughout the County including the San Rafael General Plan adopted in 2021, were used to produce VMT estimates. The TAMDM requires land uses to be defined for each geographic area in the region, i.e., the MAZ. The model land use inputs include numbers of households, persons and their attributes, employees by employment category, as well as enrollment at schools. TAMDM had defined a 2040 land use forecast for the RTP/SCS based on regional economic forecasts. This forecast was assumed to be generally consistent with the allowable land uses in the Marin Countywide Plan.



The transportation modeling completed for the Housing and Safety Elements Update includes all of the identified candidate housing sites, which contain a total of 10,993 potential residential units. The inclusion of all candidate sites was chosen for modeling for two primary reasons. First, the approach results in conservative VMT and traffic volume projections that reflect a “worst case” condition, not only for the transportation analysis but for analyses conducted for other disciplines including for greenhouse gas emissions and noise. Second, including all candidate sites ensures that the impacts resulting from a smaller subset of sites such as those included in the proposed Project (or defined at a later time by decision makers) have been fully accounted for in the environmental analysis.

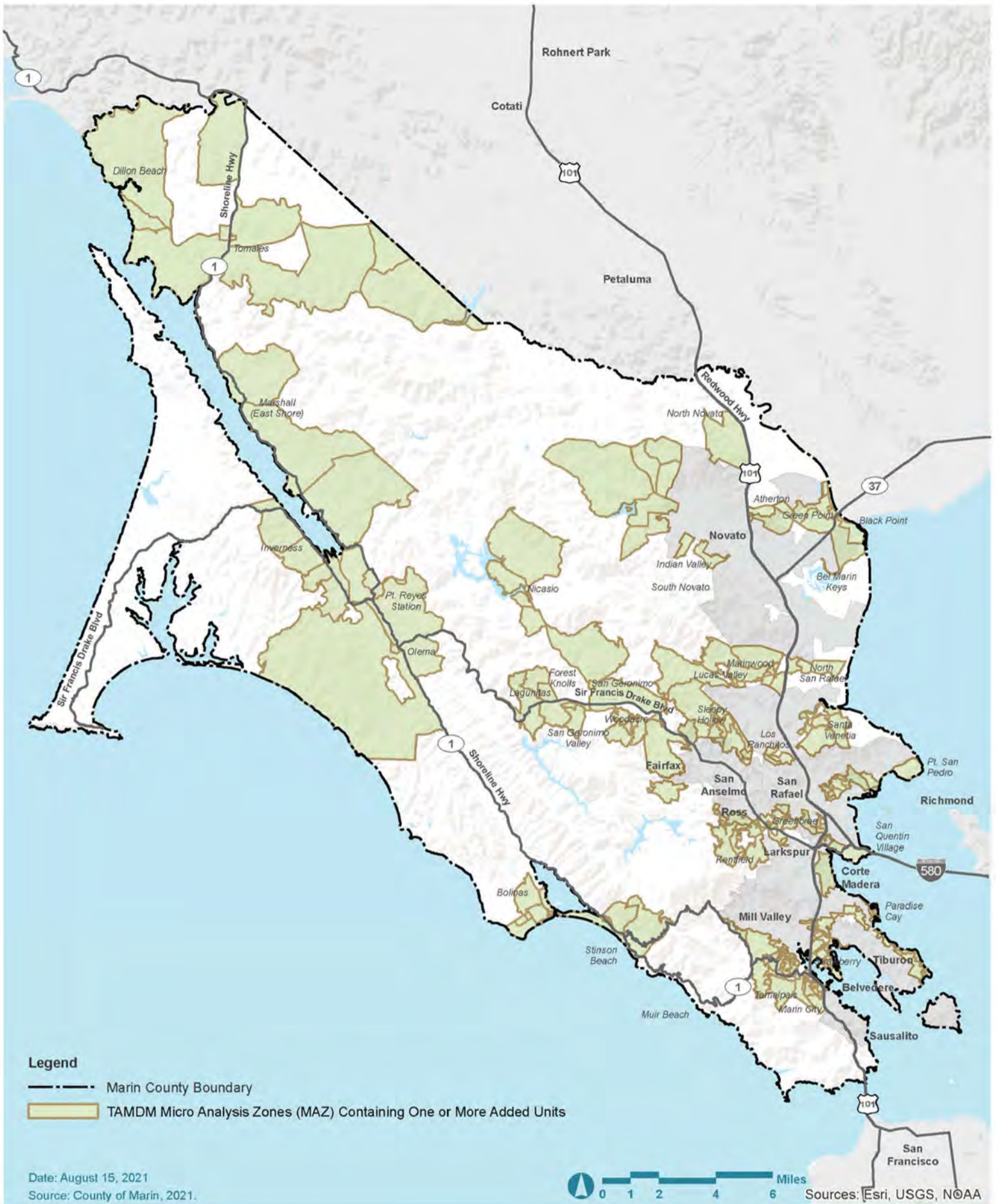
The land use and population changes associated with the proposed Housing and Safety Elements Update were compiled and used for two project-specific model runs, one of which was performed for base year 2019 plus candidate sites, and the other of which was performed for the forecast year 2040 plus candidate sites. A map of MAZs in the County that contain one or more added housing units is shown in Figure 18-5. From these model runs as well as the “no project” 2019 and 2040 runs, VMT per capita metrics were extracted. These metrics include all home-based trips made by residents, including trips while away from home, but do not include trips visiting residences (e.g., non-home-based trips made by deliveries and visitors). The county average VMT per capita is calculated by summing the vehicle mileage (excluding trips made by transit, bicycle or walking) for all trips made by Marin County residents and dividing by the county population. Similarly, the regional average VMT per capita is calculated by summing the vehicle mileage (excluding trips made by transit, bicycle or walking) for all bay area trips and dividing by the bay area population. VMT estimates for the 2019 baseline modeled conditions are shown in Table 18-1.

**VMT Performance Metric.** The County of Marin’s approach to analyzing VMT impacts is consistent with guidance contained in the OPR Technical Advisory. Potential impacts are analyzed by measuring home-based VMT per capita, which represents the VMT associated with all home-based vehicular travel, measured in miles, divided by the population of the residential units that are generating the travel. The OPR Technical Advisory indicates that residential VMT in unincorporated county areas should be compared to a regional average, which for Marin County corresponds to the nine-county Bay Area overseen by MTC. Further information on the applied VMT significance thresholds is provided in the Thresholds of Significance section below.

**Table 18-1**  
**TAMDM Demographics and VMT, 2019 Baseline Conditions**

<b>Units</b>	<b>Bay Area Region</b>	<b>Marin County Unincorporated</b>
Population	7,823,162	68,799
Residential VMT	98,849,727	1,198,624
<b>Residential VMT per Capita</b>	<b>12.6</b>	<b>17.4</b>
Total VMT	201,857,447	1,821,199

Source: TAMDM, Kittelson & Associates, 2022



**Figure 18.5 - TAMDM Zones with Potential Added Units**

**Screening.** CEQA allows for the use of screening thresholds or criteria to identify certain types of projects that can be expected to cause a less-than-significant impact without needing to conduct a detailed analysis (State CEQA Guidelines sections 15063(c)(3)(C), 15128, and the environmental checklist included in CEQA Appendix G). The OPR Technical Advisory suggests that lead agencies use such criteria to “screen out” VMT impacts for qualifying projects and includes descriptions of several screening types. Following are the screening criteria identified in the OPR Technical Advisory that may pertain to residential projects:

- **Small Project Screening:** Projects that generate or attract fewer than 110 trips per day may be presumed to have a less-than-significant impact; this translates to approximately 11 single family homes or 16 to 24 multifamily apartments (depending on density).
- **Map-Based Screening:** Projects located within areas that have been mapped by jurisdictions as being low-VMT areas, as evidenced through quantified VMT data. While such VMT data is available from the TAMDM model, the County of Marin has thus far not produced formal VMT screening maps, so this measure does not currently apply.
- **Screening of Sites Near Major Transit Stops:** Projects located within one-half mile of a major transit stop as defined in Public Resources Code 21064.3. In Marin County the only locations qualifying are those within one-half mile of SMART stations and ferry terminals. Note that screening of such sites also requires floor area ratios (FAR) to be 0.75 or greater, parking supplies that do not exceed code requirements, and consistency with Plan Bay Area.
- **Affordable Residential Development Screening:** Projects containing 100 percent affordable residential development in infill locations, or locations where a jobs/housing imbalance exists and affordable housing would be expected to result in shorter commute trips.

## 18.4 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to transportation that could result from the Project and discusses Project policies and actions that would avoid or reduce those potential impacts.

### 18.4.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to transportation if it would:

- A. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- B. Conflict or be inconsistent with State CEQA Guidelines § 15064.3, subdivision (b). For the purposes of this evaluation, this impact would be significant if development of the housing sites identified in the Housing and Safety Elements Update would generate a home-based VMT per capita that is greater than 10.7 miles, which corresponds to a level of 15 percent below the regional average VMT per capita.
- C. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

D. Result in inadequate emergency access.

*Vehicle Miles Traveled Significance Criteria*

State CEQA Guidelines § 15064.3, subdivision (b) pertains to the use of VMT as a significance threshold. As described in the methodology section above, residential projects are analyzed using a home-based VMT per capita performance metric. The OPR Technical Advisory states that for land use projects or programs in the unincorporated areas of a county within a Metropolitan Planning Organization (MPO) area, which for Marin County is the MTC nine-county Bay Area, the VMT significance threshold should be based on the regional average VMT per capita. A residential project exceeding a level of 15 percent below the region's existing VMT per capita is considered to have a significant transportation impact.

The existing average regional VMT per capita is 12.6 miles, as reported from the TAMDM model used in this analysis, which has a base year of 2019. The applicable VMT significance threshold is therefore 15 percent below this value, or 10.7 VMT per capita.

For the purposes of determining consistency with SB 743 (as specified in State CEQA Guidelines § 15064.3, subdivision (b)), the project's potential VMT impacts are considered in the context of baseline conditions using a VMT per capita efficiency metric, consistent with guidance provided in the OPR Technical Advisory. With respect to cumulative impacts, the OPR Technical Advisory states, "A project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Accordingly, a finding of a less-than-significant project impact would imply a less-than-significant cumulative impact, and vice versa." While the determination of VMT significance is made by comparing baseline to baseline plus project conditions, VMT performance metrics are also provided for a cumulative scenario that is representative of year 2040 (the TAMDM model's future forecast year) including development of the potential units contained within the candidate sites.

#### **18.4.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts**

This Section contains the proposed revised and new policies and implementing programs from the Housing Element and Safety Elements Update that would avoid or reduce significant transportation impacts.

The proposed Housing Element Update would amend Implementing Program TR-1.e of the 2007 CWP to exempt residential development needed to meet the County's RHNA from being limited to the lowest end of the applicable density range. The amended text is shown below with the added clause underlined.

- *Program TR-1.e Uphold Vehicle Level of Service Standards.* Uphold peak-hour vehicle Level of Service standard LOS D or better for urban and suburban arterials and LOS E or better for freeways and rural expressways. Only the Congestion Management Program-specified roadway and highway segments operating at a lower LOS than the standard in 1991 are grandfathered and may continue to operate at the lower LOS standard until such time as the roads are improved or the traffic load or demand is reduced or diverted. An improvement plan should be developed for Highway 101 and the grandfathered roadway segments to address existing deficiencies. Unless determined to be infeasible, alternatives that reduce fossil fuels and single occupancy vehicle use should be considered a priority over infrastructure improvements such as road widening. New development shall be

restricted to the lowest end of the applicable residential density/commercial floor area ratio range where the LOS standards will be exceeded at any intersection or road segment or worsened on any grandfathered segment. Densities higher than the low end of the applicable residential density/commercial floor area ratio may be considered for the following:

- Development that qualifies as Housing Overlay Projects in accordance with Policy CD-2.3, Establish a Housing Overlay Designation, and Program CD-2.d, Implement the Housing Overlay Designation.
- Mixed-use projects developed in accordance with Policy CD-8.7.
- Second units developed pursuant to State law.
- New housing units affordable to very low and low income households.
- Property identified in the Housing Element as necessary to meet the Regional Housing Needs Allocation (RHNA).

All projects shall be conditioned to include feasible mitigation measures for project-related traffic impacts.

The proposed Safety Element Update also includes the following Policy and Implementing Programs that relate to transportation:

- *Program EHS-2.4.e Ensure Access to New Development.* Require new development to include adequate roadway ingress/egress for emergency access and evacuation routes.
- *Policy EHS-5.2 Ensure Adequate Fire Protection.* Ensure that adequate fire protection, including adequate evacuation routes, is provided in new development and when *modifications are made to existing development.*
- *Program EHS-5.3.b Regularly Update Development Standards.* Request Fire Department review of County requirements for peak-load water supply and roadways (especially on hillsides) to determine whether those provisions need modification to meet evolving State standards, such as limiting narrow roads or one-way road use, grade/slope limits, minimum turning radius, and turnaround widths, to ensure adequate fire protection and suppression.

### 18.4.3 Project Effects on Traffic Congestion

The *Marin Countywide Plan Update Final Environmental Impact Report, 2007*, and *2012 Draft Marin County Housing Element Supplement to the 2007 Countywide Plan EIR, 2012*, assessed congestion-based LOS impacts on several roadway segments and intersections. Both EIRs found that cumulative development in the County of Marin would result in significant and unavoidable transportation impacts. As of July 1, 2020, LOS and congestion-related measures are no longer considered in CEQA.

From a non-CEQA perspective, the proposed Housing and Safety Elements Update includes the potential development of more housing units in the unincorporated County of Marin than have been analyzed in prior LOS analyses completed for the 2012 Housing Element EIR and the Countywide Plan EIR, both of which were found to contribute to unacceptable LOS below

the LOS D standard called for in Implementing Program TR-1.e of the Countywide Plan. The proposed Housing and Safety Elements Update can therefore also be expected to contribute to unacceptable levels of service on major corridors including, for example, segments of US 101, I-580, Shoreline Highway, SR 131, and Sir Francis Drake Boulevard. Despite the County's efforts in emphasizing non-auto travel and travel demand management (Countywide Plan Policy TR-1.1 and Implementing Program TR-1.s) as well as investment in the Countywide bike network and SMART commuter rail, it is clear that it may be impossible to maintain the LOS D target for traffic operation established in the Countywide Plan over a long-range horizon. Nonetheless, the proposed plan's contributions to existing and cumulative traffic congestion would not be considered an adverse environmental impact, so are not further analyzed in this EIR.

#### **18.4.4 Impacts and Mitigations**

The following analysis is provided at a programmatic level consistent with the level of detail of the proposed Project.

**Impact 18-1: Conflict with Adopted Policies, Plans, or Programs Regarding Roadways.**  
*[Threshold of Significance (a)]* The Housing and Safety Elements Update would be consistent with Marin Countywide Plan policies regarding roadways.

The Housing and Safety Elements Update would be substantially consistent with Marin Countywide Plan policies regarding transportation. The Transportation Element in the 2007 Countywide Plan contains policies and implementing programs intended to maintain and improve the County's roadway network, including managing travel demand (adopted Policy TR-1.1), development of a VMT reduction monitoring and transportation demand management program (adopted Implementing Program TR-1.s), reducing single-occupancy vehicle trips (adopted Implementing Program TR-1.t), and creation of a car share program (adopted Implementing Policy TR-1.u). These adopted policies and implementing programs would help manage the transportation needs created by development of the potential housing sites identified in the Housing and Safety Elements Update.

Adopted Policy TR-1.8 of the 2007 Countywide Plan calls for the County to reduce VMT such that the rate of increase in total VMT associated with single-occupancy vehicles does not exceed the population growth rate. Consistency with this policy was assessed using modeling outputs from the TAMDM model, comparing year 2019 conditions without the Housing and Safety Elements Update to cumulative year 2040 conditions with the Update. In comparing these scenarios, the TAMDM model estimates population in unincorporated Marin County to increase by 39 percent with development of all candidate sites. Comparing the same two scenarios, the total VMT generated by single-occupant vehicles with all candidate sites is estimated to increase by 29 percent. Since the increase in single-occupant vehicle VMT would be less than the increase in population, there would be no conflict with adopted Policy TR-1.8. For the smaller subset of candidate sites comprising the proposed Project, there is likely to be little difference in the percentage of VMT generated by single-occupant vehicles since the multimodal transportation networks would effectively be the same as would exist with the complete inventory of candidate sites. Accordingly, the rate of increase in single-occupant vehicle VMT versus population would be similar to that modeled for the total candidate sites, and the proposed Project would also not conflict with adopted Policy TR-1.8. See Impact 18-4, below, for discussion and analysis of additional VMT performance metrics.

Several 2007 Countywide Plan policies and implementing programs would apply to individual development projects occurring on sites identified in the Housing and Safety Elements Update

as part of individual project-level reviews during the entitlement process. These include requiring necessary transportation improvements before or concurrent with new developments (adopted Policy TR-1.5) and preparation of traffic impact analyses and identification of measures needed to maintain roadway performance, including LOS (adopted Implementing Program TR-1.a). While LOS is no longer considered in CEQA assessments, the County of Marin still maintains LOS standards in the Countywide Plan and will continue to require the preparation of traffic impact studies for development projects in the same manner that is currently applied. Any circulation constraints or deficiencies that are identified in impact studies, including measures needed to maintain roadway performance, would be addressed as conditions of approval rather than CEQA mitigation measures. The Housing and Safety Elements Update would not preclude traffic impact studies from being prepared, and would not preclude the County from requiring transportation improvements to be completed by development projects (including modifications to improve traffic operation, access, and bicycle, pedestrian, and transit improvements), so would not be in conflict with adopted Policy TR-1.5 or adopted Implementing Program TR-1.a.

Adopted Policy TR-1.6 and related Implementing Program TR-1.o call for limiting roadways in West Marin to two-lane routes (not including bike lanes, turn lanes, or turnouts), working with other jurisdictions to enhance road safety and access for non-auto users, and reducing congestion through means other than increasing vehicle capacity. Development of sites identified in the Housing and Safety Elements Update will be subject to this adopted policy and implementing program as part of the development review and permitting process.

Adopted Implementing Program TR-1.e of the Countywide Plan pertains to upholding vehicle LOS standards. As traffic impact studies are completed for individual development projects occurring on potential housing sites identified in the Housing and Safety Elements Update, it is likely that some locations will be identified where LOS targets would be exceeded, or auto delays increased, as a result of the development project(s). As explained above, because effects on automobile LOS and congestion cannot be considered in CEQA analyses, lack of compliance with the County's LOS standard would not be considered a significant environmental impact.

Adoption of the proposed Housing and Safety Elements Update would include amendments to Implementing Program TR-1.e of the Countywide Plan, which would exempt residential development needed to meet the County's RHNA from being limited to the lowest end of applicable density ranges. While limiting density is a strategy that can be used to reduce a project's effects on traffic congestion, it can have the opposite influence on VMT, since increasing residential density has been shown to reduce the amount of VMT generated per person (*Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity*, California Air Pollution Control Officers Association (CAPCOA), 2021). Limiting residential units to the low end of the allowed density range would reduce the potential quantity of units identified in the Housing and Safety Elements Update; however, from a CEQA transportation impact perspective, limiting density would also be inconsistent with standard VMT reduction strategies and in fact could cause potential VMT impacts to be exacerbated. By incorporating amendments to Implementing Program TR-1.e that exclude housing sites needed to meet RHNA requirements from this provision, the Housing and Safety Elements Update would not conflict with the Countywide Plan.

Because the Housing and Safety Elements Update would not conflict with policies, plans, or programs regarding roadways, and individual developments will be reviewed through the

entitlement process to determine necessary transportation improvements, the impact is considered ***less-than-significant***.

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**Impact 18-2: Conflict with Adopted Policies, Plans, or Programs Regarding Public Transit.** *[Threshold of Significance (a)]* With respect to policies and programs relating to public transit, the 2007 Marin Countywide Plan encourages the expansion and improvement of local bus and ferry services (adopted Policy TR-3.1), development of intermodal transit hubs and upgrades to existing hubs (adopted Policy TR-3.3 and Implementing Program TR-3.e), promoting transit-oriented development within one-half mile of intermodal hubs (adopted Implementing Program TR-3.f), ensuring that transit systems provide for the storage of bicycles on transit and at transit centers (adopted Policy TR-3.5), and supporting creation of shuttle services connecting users to major public transit facilities (adopted Implementing Program TR-3.f). The Housing and Safety Elements Update would not conflict with these policies and programs, which support existing and future transit users and encourage the use of transit as a travel mode.

Individual development projects proposed on any of the housing sites identified in the Housing and Safety Elements Update would be subject to review by the County of Marin and applicable transit agencies to ensure that adequate access to available transit would be provided. During these project-specific reviews, overseeing agencies would identify required improvements such as bus pullouts, transit shelters, and pedestrian sidewalks or paths connecting to transit stops.

Because the Housing and Safety Elements Update would not conflict with policies, plans, or programs regarding public transit, and individual developments would be reviewed through the entitlement process to determine the adequacy of site-specific transit facilities, the impact is considered ***less-than-significant***.

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**Impact 18-3: Conflict with Adopted Policies, Plans, or Programs Regarding Bicycle and Pedestrian Facilities.** *[Threshold of Significance (a)]* The Housing and Safety Elements Update would be substantially consistent with policies and programs in the 2007 Marin Countywide Plan pertaining to public transit, bicycle, and pedestrian facilities. The Countywide Plan identifies several policies and implementing programs intended to improve facilities for non-auto modes and promote non-auto travel. These include improving the bicycle and pedestrian networks (adopted Policy TR-2.1), working with community groups to encourage bicycling and walking (adopted Implementing Program TR-2.a), encouraging the development of bicycle stations including attended parking (adopted Implementing Program TR-2.c), ensuring Safe Routes to Schools (adopted Implementing Program TR-2.j), working with Marin County jurisdictions and Caltrans to improve pedestrian facilities (adopted Implementing Program TR-2.k), and including safe and convenient bicycle and pedestrian access in all transportation improvement projects (adopted Implementing Program TR-2.1l). The Housing and Safety Elements Update would not be in conflict with these policies and programs.

Adopted Policy TR-2.2 and Implementing Program TR-2.b of the Countywide Plan require new development to provide facilities for bicyclists and pedestrians where appropriate. This includes “bicycle and pedestrian access internally and to other areas through easements; safe access to public transportation and construction of paths that connect with other nonmotorized routes; safe road crossings at major intersections for school children and seniors; and secure,



weatherproof bicycle storage facilities and shower/changing room facilities for bicycle commuters” (adopted Implementing Program TR-2.b). Individual development projects proposed on any of the housing sites identified in the Housing and Safety Elements Update would be subject to review by the County of Marin during the entitlement process to ensure that adequate pedestrian and bicycle facilities are provided. As appropriate, the County would identify required improvements such as internal and offsite connections, completion of planned bicycle facilities along project frontages, provision of pedestrian connections to bus stops, implementation of crossing improvements, and provision of bike parking.

Because the Housing and Safety Elements Update would not conflict with policies, plans, or programs regarding bicycle and pedestrian facilities, and individual developments will be reviewed through the entitlement process to determine the adequacy of site-specific pedestrian and bicycle facilities, the impact is considered **less-than-significant**.

**Impact 18-4: Impacts Related to Vehicle Miles Traveled.** *[Threshold of Significance (b)]*  
The Planning Area used in the VMT analysis consists of all MAZs within the TAMDM model that contain one or more candidate housing sites identified for the Housing and Safety Elements Update. The VMT modeling results produced by TAMDM indicate that with the additional housing units, residential uses in the Planning Area would on average generate 19.7 VMT per capita, exceeding the applied 10.7 VMT per capita threshold of significance by approximately 84 percent. This would be a **significant impact**.

Table 18-2 summarizes the VMT efficiency metrics assessed for the Housing and Safety Elements Update.

**Table 18-2:  
VMT Performance Metrics**

Scenario	Home-Based VMT per Capita	Above Significance Threshold?
Threshold of Significance		
A. Existing Regional Average (Bay Area)	12.6	
B. 15% below Regional Average (Threshold of Significance)	10.7	
<b>Planning Area Averages</b>		
C. Existing Average in Planning Area	17.2	Yes (+61%)
D. Existing + Candidate Sites Average in Planning Area	19.7	Yes (+84%)
E. 2040 + Candidate Sites Average in Planning Area	18.9	Yes (+77%)

Note: Planning Area refers to the TAMDM micro analysis zones (MAZs) that contain candidate sites and their potential residential units; significant impact would occur if the results shown in row D are greater than those shown in row B.

Source: TAMDM, W-Trans, Kittelson & Associates, 2022

The results for the Housing and Safety Elements Update shown in Table 18-2 are associated with potential development of up to 10,993 residential units within the candidate housing sites. From the VMT modeling completed for the candidate sites, it is possible to qualitatively discern how the smaller set of Project sites would perform. This comparison is informed by the modeling conducted in the TAMDM model by isolating all MAZs containing Project sites from the broader set of candidate site MAZs, and reviewing the resulting home-based VMT per capita metrics. Based on this assessment, it is estimated that the Planning Area containing the 5,214 potential Project units would be expected to generate approximately 19.5 home-based VMT per capita under Existing plus Project conditions. This result is slightly lower than the 19.7 home-based VMT per capita forecast for the entire inventory of candidate sites, although the difference is considered minimal. This is because the process used to estimate the Project sites VMT, while informed by TAMDM modeling results, is less precise than the dedicated TAMDM modeling completed for the overall inventory of candidate sites; the difference is considered within the margin of error between the two methodologies.

The applied VMT threshold of significance is established using data for the nine-County Bay Area, consistent with guidance provided by OPR. Counties with major urban centers perform very favorably from a VMT perspective, including San Francisco and Alameda Counties, which have average household VMT per capita levels of 6.6 and 10.4, respectively. These high-population counties also heavily weight the calculation of per capita regional VMT. In contrast, counties such as Marin, Sonoma, and Solano that have less dense development patterns and are further from the core regional population and employment centers have average per capita VMT levels that are well above the regional average and significance threshold. Further, within these higher-VMT counties, many of the areas with the highest VMT levels are in unincorporated portions of the county where fewer non-auto travel options exist. For these reasons, it is extremely difficult for residential development projects in unincorporated Marin County to achieve VMT significance thresholds that are set using a regional average. This difficulty is demonstrated by the significant VMT impact described above for the proposed Housing and Safety Elements Update.

### *Cumulative Effects*

The proposed Housing and Safety Elements Update's VMT significance is established by comparing Existing plus Project conditions to regional VMT significance thresholds based on a VMT per capita performance metric, as presented above. As the OPR *Technical Advisory* states, "A project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact." While not used in this analysis for the purposes of establishing impact significance, the cumulative 2040 plus Project VMT per capita associated with the 10,993 units in all candidate sites was projected using the TAMDM model. The results indicate that the 2040 plus Project residential VMT per capita in the Planning Area would be 18.9 miles, which is lower than the 2019 plus Project level of 19.7 miles. This suggests that residential VMT per capita in unincorporated Marin County is anticipated to trend favorably and decrease over time. It would, however, still be well above the significance threshold of 10.7 VMT per capita.

VMT estimates were also developed for the smaller set of 5,214 potential units comprising the Project sites using the same method described above. The results indicate that the Planning Area comprising the Project sites would be expected to generate approximately 18.6 home-based VMT per capita, which is slightly lower than the 18.9 metric forecast for the universe of candidate sites. Again, as noted above, the cumulative results for all candidate sites versus the Project sites should be considered generally equivalent given the modest difference in results and methodologies used.

#### *Policies Reducing VMT Impact*

Adopted Policy TR-1.8 in the Countywide Plan calls for reducing the rate of increase for total vehicle miles traveled by single-occupant automobile to not exceed the population growth rate. Adopted Implementing Program TR-1.s calls for the County to develop and implement a program for monitoring and reducing VMT, and requiring in new developments specific transportation demand management (TDM) strategies for reducing the VMT below levels that would otherwise occur. The Program identifies strategies including increased transit, focusing residential development near transit, and indicating that multi-family projects with 25 or more units should include TDM measures and provide connections to non-auto mode facilities. While complying with this adopted policy and implementing program would be expected to reduce the residential VMT per capita associated with the proposed Housing and Safety Elements Update, such reductions may be insufficient to fully offset the Projected VMT impacts. Additional mitigation is required.

**Mitigation Measure 18-4.** Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, OPR, 2018 (or subsequent updates), or future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments.

For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a major role in most cases. Following are TDM and other strategies that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.

- Subsidize resident transit passes
- Provide or participate in established ride-matching program(s)
- Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator
- Complete bus stop improvements or on-site mobility hubs
- Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit
- Reduce parking supply at affordable or senior projects and projects that are well-served by transit
- Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present
- Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)
- Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.

This mitigation measure would reduce the VMT impacts associated with future residential development projects.

However, given the inability to assure that residential VMT per capita can be reduced below significance thresholds despite required VMT reduction strategies, this impact would be **significant and unavoidable**.

The program-level VMT impact described above does not preclude the finding of a less-than-significant impact for future development projects that achieve VMT per capita levels that are below applicable thresholds of significance, including those that qualify for VMT screening as defined in OPR guidance or future VMT policies adopted by the County of Marin.

If all individual developments occurring on the sites identified in the Housing and Safety Elements Update are able to achieve the required residential VMT per capita, impacts would be reduced to a less-than-significant level. There are, however, two important aspects that introduce uncertainty as to whether these reductions can consistently be achieved. First, the proposed Housing and Safety Elements Update is a programmatic plan. Specific development plans defining the size, configuration, and characteristics of potential future residential projects could potentially result in VMT projections that are lower for some sites than reflected in the TAMDM modeling completed for this EIR analysis, but site-specific information about future development projects is not available at this time.

Because VMT performance is sensitive to these factors, it is not currently possible to conclusively determine VMT performance metrics and the effectiveness of VMT reduction strategies for individual sites or for the collective Housing Element sites as a whole. Second, there is uncertainty about the ability of development projects on Project sites to achieve the required VMT reductions—particularly sites in suburban and rural locations where it is infeasible to provide new or more frequent transit service and very few VMT reduction strategies are viable, at least until such time that VMT mitigation fee programs, banks, or exchanges can be established. Potential residential development sites that are large and located near the US 101 corridor, SMART, and/or ferry terminals are likely to be able to establish viable TDM and VMT reduction strategies. In contrast, potential sites that are located farther from the US 101 corridor and in areas lacking transit infrastructure may have few feasible options to substantially reduce residential VMT per capita. This impact is **significant and unavoidable** even with mitigation.

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**Impact 18-5: Hazards Due to Design Features or Incompatible Uses.** *[Threshold of Significance (c)]* While the designs of individual residential development projects covered by the Housing and Safety Elements Update are not known at this time, vehicular access is anticipated to generally take place via existing streets. Where new roads or access points are required, specific access schemes would be determined during project design, and would undergo review for compliance with safety and design standards by the County of Marin. During such reviews, routine assessments include consideration of the potential need for traffic control or turn lane improvements to maintain safety, the potential for queueing conditions that could lead to safety concerns, and safety related to site accessibility for non-auto modes. Any new transportation facilities would be designed and constructed to local, regional, and federal standards, and as such, would not be expected to introduce any hazardous design features. As discussed under Impact 18.6 below, the Safety Element Update includes policies that require assessments of evacuation routes to improve how transportation facilities function during emergencies.

Several potential development sites are located on or adjacent to Highway 1, which is a Caltrans facility. The memorandum *Traffic Safety Bulletin 20-02-R1: Interim Local Development Intergovernmental Review Safety Review Practitioner's Guidance*, California Department of Transportation (Caltrans), 2020, provides guidance on how jurisdictions and

practitioners may assess transportation safety topics associated with local development projects. The memorandum states that “This interim guidance is intended to apply to proposed land use projects and plans affecting the State Highway System (SHS). Specific effects may include but are not limited to adding new automobile, bicycle, or pedestrian trips to state roadways; modifying access to state roadways; or affecting the safety of connections to or travel on state roadways.” The memorandum further explains that the guidance “does not establish thresholds of significance for determining safety impacts,” and reiterates that “Automobile congestion or delay itself does not constitute a significant environmental impact (Public Resources Code, §21099(b)(2)), and traffic safety should not be used as a proxy for road capacity.” As noted above, development proposals would be reviewed by the County of Marin, which, as part of standard procedures, would also refer projects located on the State Highway System to Caltrans for review. Site-specific safety assessments and required improvement measures would be established during such reviews, ensuring that project design features do not create safety hazards.

In summary, development of sites identified in the Housing and Safety Elements Update would be reviewed during standard entitlement processes for conformance with applicable design standards and regulations, ensuring that developments will not substantially increase transportation hazards. The Housing and Safety Elements Update would be expected to have a ***less-than-significant impact***.

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**Impact 18-6: Emergency Access.** *[Threshold of Significance (d)]* The proposed Housing Element and Safety Elements Update are program-level plans that does not directly assess or analyze the emergency access needs of individual development sites, although the proposed Safety Element Update does include two policies and several implementing programs that address emergency access. Proposed Policy EHS 2.4 Effective Emergency Access and Evacuation calls for the County to ensure that first responders have adequate emergency access routes and that County residents, businesses, workers, and visitors can effectively evacuate during or after a disaster. Implementing policy EHS-2.4.c Identify and Improve Deficient Evacuation Routes requires the County to implement the findings of the Marin Wildfire Protection Authority Evacuation Ingress-Egress Risk Assessment and use the visual risk assessment and risk factors to identify and prioritize existing deficient evacuation routes. Improve evacuation routes based on the prioritization ranking and in areas identified as having deficient evacuation routes affected by new development, but also in consideration of improvements required for a transportation network which is resilient to flooding and inundation from sea level rise. Implementation program EHS-2.4.d Create New Evacuation Routes calls for the County to identify and construct additional local evacuation routes in areas of high hazard concern or limited mobility. Finally EHS-2.4.e Ensure Access to New Development requires new development to include adequate roadway ingress/egress for emergency access and evacuation routes.

Additionally, proposed Policy EHS-5.2 calls for the County to ensure that adequate fire protection and evacuation routes are provided, while Implementing Program EHS-5.3.b calls for the fire department to review proposed roadways to ensure that County and State standards ensuring adequate fire protection are met.

All potential housing sites are located on or adjacent to public streets that are of sufficient width to support two-way traffic and accommodate emergency response vehicle circulation. New streets may need to be constructed to provide or improve access to certain sites. The County of

Marin, responsible emergency service agencies, and Caltrans (for projects affecting the State highway system) will review individual development projects to confirm that they conform to applicable regulations as governed by State laws, including the 2019 California Building Code, as well as local requirements, including the Marin County Urban Wildland Interface Ordinance which contains specific access requirements for development in these areas. During such development reviews, responsible agencies will confirm that emergency vehicle access is adequate, including access from public streets to sites, internal circulation, and maneuverability at intersections. Proposed development projects that do not meet required standards and codes would not be permitted.

The added vehicular traffic associated with development of potential housing sites could affect emergency response vehicles during peak commute hours; however, responders are trained to manage congested conditions by employing tactics such as using sirens, making use of turn lanes and shoulders to bypass stopped traffic, and utilizing alternate routes to bypass congestion and minimize response times. California law also requires drivers to yield the right-of-way to emergency vehicles and remain stopped until emergency vehicles pass.

Considering that individual development projects facilitated by the Housing and Safety Elements Update will be subject to established procedures for reviewing project-level emergency access needs and compliance with State and local law as part of the entitlement process, impacts would be ***less-than-significant***.

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## 19. UTILITIES AND SERVICE SYSTEMS

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Utilities and Service Systems. <i>Would the project:</i></b>				
a) <i>Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?</i>			X	
b) <i>Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?</i>	X			
c) <i>Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?</i>	X			
d) <i>Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?</i>			X	
e) <i>Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?</i>			X	

This chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts.

### 19.1 ENVIRONMENTAL SETTING

#### 19.1.1 Water

**A. Existing Domestic Water Supply.** Marin County's water supplies include surface water, groundwater, recycled water, and imported water. Surface water is the main source of supply for urban areas in the eastern portion of the County, while both groundwater and surface water are the primary sources for rural areas. There are six water districts and independent water systems supplying water to Marin residents. Marin Municipal Water District (MMWD) and North Marin

<sup>1</sup>CEQA Guidelines, Appendix G, item XIX (a through e).

Water District (NMWD) are the principal entities managing and delivering water to residential and commercial consumers. Water delivery in West Marin encompasses a range of scales, from the large water districts to small community water districts and smaller, individual systems. The small community water districts include Marin Municipal Water District (MMWD), North Marin Water District (NMWD), Stinson Beach County Water District (SBCWD), Muir Beach Community Services District (MBCSD), Inverness Public Utility District (IPUD), and Bolinas Community Public Utility District (BCPUD). The community of Dillon Beach is served by two small independent water companies: the California Water Service Company (CWSC, Cal Water) and the Estero Mutual Water System (EMWS). (See Figure 19-1, below).

*Marin Municipal Water District:* The Marin Municipal Water District (MMWD) serves the largest customer base in Marin, providing water to the eastern corridor of Marin County from the Golden Gate Bridge northward up to, but not including, Novato. MMWD serves approximately 191,000 people and the district encompasses an area of 147 square miles. MMWD's potable water sources include runoff collected from the Mt. Tamalpais watershed and West Marin and stored in seven reservoirs maintained by MMWD. Additional potable water supply comes from the Russian River water system in Sonoma County. MMWD's recycled water supply (non-potable) is drawn from a Recycled Water Facility at Las Gallinas Valley Sanitary District.

MMWD currently distributes an average of 22 million gallons of water per day (MGD) and has a 55 MGD daily water production potential (Marin Water Fact Sheet 2020). MMWD's Water Resources Plan 2040 includes a range of demands projected to 2040. The upper range of the projection anticipates that MMWD will need to provide 29,200 acre-feet of water per year, which is approximately 26 MGD. This projection assumes a per capita water use level of 124 gallons per capita per day, which is a water use level required by the Water Conservation Act of 2009. The projection also assumes that demands will increase with population, and no conservation. MMWD's Water Resources Plan also includes a baseline demand projection of 24,200 acre-feet of water per year, which is approximately 21.6 MGD. This projected demand is lower than current demand, and is based on MMWD 2008 average demands, and assumes existing and planned passive and active conservations measures will be followed.

*North Marin Water District:* The North Marin Water District (NMWD) serves the City of Novato and the Point Reyes, Inverness Park, Olema, and Oceana Marin areas of West Marin. In the Novato Service Area NMWD serves a population of approximately 61,655 people and encompasses an area of approximately 75 square miles. In the West Marin Service Area, NMWD serves a population of approximately 1,800 people and encompasses an area of approximately 24 square miles.

In the Novato Service Area, NMWD's potable water sources include imported water from the Russian River via Sonoma County Water Agency (SCWA), as well as runoff from upper Novato Creek stored in Stafford Lake. NMWD's non-potable, recycled water supply is drawn from Novato Sanitary District and treated at the Deer Island Recycled Water Facility and the Davidson Street Recycled Water Facility before distribution by NMWD. Las Gallinas Valley Sanitary District also provides recycled water for distribution by NMWD.



**Figure 19.1 - Water Service Districts and Providers**

Dependent upon availability, effective through 2037, NMWD has an annual entitlement of 14,100 acre-feet per year of water from SCWA. Additionally, NMWD has the potential to retrieve an additional 1,000 acre-feet per year from Stafford Lake<sup>2</sup>. These two sources comprise the potable water supply for the Novato Service Area. According to NMWD's 2022 Annual Water Supply and Demand Assessment<sup>3</sup> for the Novato Service Area, as a result of the drought, NMWD will have a projected dry year potable water supply of 8,689 acre-feet of water from Sonoma County Water Agency (SCWA) for the period of June 2022 to June 2023. Additionally, NMWD projects that 664 acre-feet of water from Stafford Lake will be utilized in this period. When combined, these sources total 9,353 acre-feet of water or approximately 8.35 MGD.

In April 2021 NMWD enacted water shortage actions identified in their Water Shortage Contingency Plan (WSCP) and asked customers to reduce water use up to 20%. According to their 2022 Annual Water Supply and Demand Assessment, NMWD had an average demand of 7,992 acre-feet or approximately 7.13 MGD of water in Fiscal Year 2020, prior to asking their customers to conserve water. .

NMWD projects that potable water demands will increase to 10,463 acre-feet per year or approximately 9.3 MGD by 2035<sup>4</sup>. This projection includes accounting for estimates in population growth and new housing as well as passive water savings. However, provision of 10,463 acre-feet of water per year in the Novato Service Area will be dependent upon water availability, either through the return to pre-drought water supply levels or by finding alternate water sources. NMWD has enacted emergency water conservation ordinances which include no new water service connections except under limited conditions (NMWD Emergency Ordinance 41).

In the West Marin Service Area, NMWD's potable water sources include three wells located adjacent to Lagunitas Creek. Two of the wells are located in Point Reyes Station and the third is located approximately 1.5 miles east of Point Reyes Station<sup>5</sup>. As of 2014, by Water Licenses and Water Right Permits, NMWD may divert up to 654 acre-feet of water per year from their wells. However, restrictions apply such that NMWD may not divert water in specific months during dry years<sup>6</sup>. According to the 2014 West Marin Water System Master Plan, Final Report, NMWD also has an intertie Connection Agreement with Marin Municipal Water District for the release of 250 acre-feet of water from Kent Lake to supplement water supply in the West Marin Service Area in dry years. NMWD has also enacted emergency water conservation ordinances in the West Marin service area which include no new water service connections (NMWD Emergency Ordinance 39).

*Stinson Beach County Water District:* The Stinson Beach County Water District (SBCWD) serves a population of 608 permanent residents and up to 15,000 residents and visitors on the

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<sup>2</sup>2020 Urban Water Management Plan for North Marin Water District prepared by EKI Environment and Water, Inc., June 2021

<sup>3</sup>2022 Annual Water Supply and Demand Assessment prepared by EKI Environment and Water, Inc., June 30, 2022.

<sup>4</sup>2020 Urban Water Management Plan for North Marin Water District prepared by EKI Environment and Water, Inc., June 2021

<sup>5</sup>North Marin Water District, "West Marin Water", <https://nmwd.com/your-water/west-marin-water/> , Accessed July 13, 2022

<sup>6</sup>2014 West Marin Water System Master Plan, Final Report prepared by North Marin Water District, August 2014

weekends and holidays. SBCWD's jurisdictional boundary encompasses approximately 10 square miles along the Pacific Ocean coast in West Marin. SBCWD's sources for water supply are primarily groundwater from wells but also local creeks. The water system includes a storage capacity of approximately 1.25 million gallons.<sup>7</sup>

*Muir Beach Community Services District:* The Muir Beach Community Services District (MBCSD) serves 159 customers within a jurisdictional boundary of approximately 1.3 square miles in West Marin adjacent to the Pacific Ocean coast. MBCSD primarily uses groundwater for water supplies.

*Inverness Public Utility District:* The Inverness Public Utility District (IPUD) serves an estimated population of 1,100 in a service area encompassing approximately 2.5 square miles in West Marin at the southern end of Tomales Bay. IPUD's water is captured from springs and streams in the Inverness area. The water system includes a storage capacity of 440,000 gallons. Water production in the fiscal year of 2020-21 was approximately 28.5 million gallons and average daily water usage ranged from 42,900 to 84,100 gallons.<sup>8</sup> According to the "Historical Overview of the Determination of the Capacity Design of the Inverness P.U.D. Water System" provided by Inverness Public Utility District on February 28, 2022, the water system was designed to serve 600 residential unit equivalents (RUE) based upon recommendations made in 1986. As of 2022 IPUD is committed to providing water service to 625 RUEs, which is 25 RUEs beyond the 1986 design capacity.

*Bolinas Community Public Utility District:* The Bolinas Community Public Utility District (BCPUD) serves an estimated population of 1,620 within a jurisdictional boundary of 2.6 square miles in West Marin where the edge of Bolinas Bay meets the Pacific Ocean<sup>9</sup>. BCPUD's water is captured from streams in the Bolinas area. According to BCPUD, in the five-year period of 2016 to 2022 BCPUD supplied an average of 104 acre-feet of water per year (0.09MGD) to their community. In 2021, which was an extreme drought year in Bolinas, BCPUD supplied only 68.21 acre-feet of water (0.06MGD) to their community. Water supply typically matches community demand. BCPUD monitors the conditions of the source streams to assess how much water can be drawn for distribution and engages with the community to encourage voluntary conservation efforts when water is more scarce. The above rates reflect an average of 158 gallons per day per property provided to the community between 2016 and 2022. In 2021, the supply rate above reflects the provision of 104 gallons of water per day per property and the district was on the brink of mandatory rationing. A moratorium on new water connections has been in effect since 1971.

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<sup>7</sup>Stinson Beach County Water District, "Stinson Beach County Water District Overview", <http://stinson-beach-cwd.dst.ca.us/overview.html>, Accessed July 12, 2022

<sup>8</sup>Inverness Public Utility District, "About Us", <https://www.invernesspud.org/about-us>, Accessed July 12, 2022

<sup>9</sup>Bolinas Community Public Utility District, "District Overview", <https://bcpud.org/>, Accessed May 11, 2022

Marin County, along with the rest of the state, has continued to face drought conditions over recent years. The water year that ended September 30, 2021 was the second driest on record due to extreme heat and lack of rain and snow. As of the end of 2021, all 58 counties in California were under a drought emergency proclamation.

At least four of Marin's water districts, including those that serve the largest customer bases, face capacity concerns given current and future supplies affected by drought. Alternative measures being investigated by MMWD and NMWD as part of the districts' long-term plans, include expanding recycled water use, utilizing winter water from Sonoma County Water Agency, and constructing infrastructure to import water purchased from third parties. Another measure also being investigated by MMWD and NMWD includes utilizing supply from potential, permanent, local, or regional, desalination facilities. Marin water agencies monitor local water storage levels, encourage conservation practices, and apply various drought restrictions, water use limits, and associated penalties as needed.

Table 19-1 shows the water supply and demand by District.

**Table 19-1:  
District Water Supply**

<b>Water Service Area</b>	<b>Communities Served</b>	<b>Supply<sup>a</sup></b>	<b>Demand</b>	<b>Reserve<sup>d</sup></b>
MMWD	All cities and towns along the City-Centered Corridor from the Golden Gate Bridge to the southern border of Novato	55MGD <sup>b</sup>	26MGD <sup>c</sup>	29MGD
NMWD Non-drought year with SCWA available to supply full annual entitlement	Novato	13.5MGD <sup>m</sup>	7.13 MGD <sup>f</sup>	6.37MGD
NMWD Dry Year Supply Projection for June 2022 –June 2023	Novato	8.35MGD <sup>e</sup>	7.13MGD <sup>f</sup>	1.22MGD
NMWD West Marin	Point Reyes Station, Inverness Park, Olema, Bear Valley, Paradise Ranch Estates	0.66MGD <sup>g</sup>	0.23MGD <sup>h</sup>	0.43MGD
BCPUD	Bolinas	0.09MGD <sup>n</sup>	0.09MGD <sup>n</sup>	0 Currently at capacity. <sup>i</sup>
SBCWD	Stinson Beach	1.25MG <sup>a,j</sup>	Unknown	Unknown
IPUD	Inverness	28.5 million gallons/year <sup>k</sup>	Unknown	Currently at capacity. <sup>l</sup>
MBCSD	Muir Beach	Unknown	Unknown	Unknown
CSWS (Cal Water)	Dillon Beach	Unknown	Unknown	Unknown
EMWS	Dillon Beach	Unknown	Unknown	Unknown
Unserved Areas (Private Water System / Well)	Fallon, Inverness Park, Marshall, Nicasio, Tomales, Valley Ford	N/A	N/A	N/A

- a. MG = Million Gallons; MGD = Million Gallons per Day
- b. Marin Water Fact Sheet 2020 “Maximum Daily Water Production”
- c. MMWD Water Resources Plan 2040 dated March 2017 prepared by RMC Water and Environment and Woodward & Curran, 29,200 acre-feet per year converted to MGD as discussed above in Section 19.1.1.
- d. Subtract “Demand” from “Supply”
- e. North Marin Water District 2022 Annual Water Supply and Demand Assessment prepared by EKI Environment & Water, Inc., dated June 30, 2022. Based upon the projection that NMWD will have a “dry year” supply of 8,689 acre-feet of water from Sonoma County Water Agency and 664 acre-feet of water from Stafford Lake.
- f. North Marin Water District 2022 Annual Water Supply and Demand Assessment prepared by EKI Environment & Water, Inc., dated June 30, 2022. Based upon the fiscal year 2020 Annual Potable Demand of 7,992 acre-feet converted to MGD.
- g. 2014 West Marin Water System Master Plan, Final Report prepared by North Marin Water District, dated August 2014. Calculated based upon 2014 Existing Water Rights Diversions allowed per year and MMWD Intertie Agreement allowance.
- h. 2014 West Marin Water System Master Plan, Final Report prepared by North Marin Water District, dated August 2014. Calculated based upon Fiscal Year 2013 Average Day Demand of 234,792 gallons per day converted to MGD.
- i. Based upon a moratorium for new connections that has been in place since 1971.
- j. Stinson Beach County Water District, “Stinson Beach County Water District Overview”, <http://stinson-beach-cwd.dst.ca.us/overview.html>, Accessed July 12, 2022
- k. Inverness Public Utility District, “About Us”, <https://www.invernesspud.org/about-us>, Accessed July 12, 2022
- l. [According to the “Historical Overview of the Determination of the Capacity Design of the Inverness P.U.D. Water System” provided by Inverness Public Utility District on February 28, 2022, the water system was designed to serve 600 residential unit equivalents \(RUE\) based upon recommendations made in 1986. As of 2022 IPUD is committed to providing water service to 625 RUEs, which is 25 RUEs beyond the 1986 design capacity.](#)
- m. [2020 Urban Water Management Plan for North Marin Water District, prepared by EKI Environment & Water, Inc, dated June 2021](#)
- n. [Bollinas Community Public Utility District](#)

Table 19-2 below describes the capacity for the water districts in Marin County to provide water for new development. Three development scenarios are presented which include:

- Development of the number of housing units proposed in Unincorporated Marin County’s “Proposed Project”. The “Proposed Project” number of housing units within Table 19-2 reflects the approximate number of housing units within each district to be approved and included in the Countywide Plan.
- Development of the number of housing units proposed in Unincorporated Marin County’s “Proposed Project”, as described in 1., above, with development of the number of housing units of the other Marin County City and Town Regional Housing Needs Allocation (RHNA).
- Development of the number of housing units proposed in Unincorporated Marin County’s “Candidate Housing Sites” with development of the number of housing units of the other Marin cities’ and towns’ RHNA’s.

Where information is available, district capacity is provided for normal (non-drought) year and dry-year scenarios. Demands are compared to capacity for three scenarios: the “Proposed Project” number of housing units, the “Proposed Project” number of housing units with other Marin cities’ and towns’ RHNA units, and the number of “Candidate Housing Sites” with the number of units for other Marin city and towns’ RHNA units. The intent of the “Candidate Housing Sites” is to present a greater number of sites than required, to meet Unincorporated Marin’s RHNA. A combination of sites will be selected from the “Candidate Housing Sites” list to meet the County’s RHNA requirement. As described in 1., above, the “Proposed Project” reflects the approximate number of housing units proposed to be approved and included in the Countywide Plan.

**Table 19-2  
District Capacity for New Development**

<b>Current Reserve Volume per Day By District <sup>a</sup></b>	<b>Remaining Distribution Capacity after Development of County “Proposed Project”<sup>c</sup></b>	<b>Remaining Distribution Capacity after Development of County “Proposed Project” and other City and Town RHNA</b>	<b>Remaining Distribution Capacity after Development of County “Candidate Housing Sites” and other City and Town RHNA</b>
<b>Key:</b>			
District Name	Proposed #Units/Demand (MGD)	Proposed #Units/Demand (MGD)	Proposed #Units/Demand (MGD)
<b>Reserve <sup>a</sup> Million Gallons per Day (MGD)</b>	<b>Remaining Distribution Capacity (MGD)</b>	<b>Remaining Distribution Capacity (MGD)</b>	<b>Remaining Distribution Capacity (MGD)</b>
Marin Municipal Water District	3,948 / 2.35 <sup>b</sup>	12,694 / 7.56 <sup>b</sup>	16,039 / 9.48 <sup>b,c</sup>
29 <sup>a</sup>	30.65	25.44	23.52
North Marin Water District (Normal (non-drought) year and SCWA is able to supply full annual entitlement)	748 / 0.45 <sup>b</sup>	2,838 / 1.70 <sup>b</sup>	4,535 / 2.68 <sup>b,c</sup>
6.37 <sup>a</sup>	5.92	4.67	3.69
North Marin Water District	748 / 0.45 <sup>b</sup>	2,838 / 1.70 <sup>b</sup>	4,535 / 2.68 <sup>b,c</sup>



**Table 19-2  
District Capacity for New Development**

<b>Current Reserve Volume per Day By District <sup>a</sup></b>	<b>Remaining Distribution Capacity after Development of County “Proposed Project”<sup>c</sup></b>	<b>Remaining Distribution Capacity after Development of County “Proposed Project” and other City and Town RHNA</b>	<b>Remaining Distribution Capacity after Development of County “Candidate Housing Sites” and other City and Town RHNA</b>
(Dry Year Supply Projection for June 2022-June 2023)			
1.22 <sup>a</sup>	0.77	-0.48	--1.46
North Marin Water District – West Marin	324 / 0.19 <sup>b</sup>	324 / 0.19 <sup>b</sup>	590 / 0.35 <sup>b,c</sup>
0.43 <sup>a</sup>	0.24	0.24	0.08
Bolinas Community Public Utility District	18 / 0.01 <sup>d</sup>	18 / 0.01 <sup>d</sup>	96 / 0.03 <sup>c,d</sup>
0 <sup>a</sup>	0	0	0
Stinson Beach County Water District	19 / 0.01 <sup>d</sup>	19 / 0.01 <sup>d</sup>	41 / 0.01 <sup>c,d</sup>
Unknown	Unknown	Unknown	Unknown
Inverness Public Utility District	39 / 0.01 <sup>d</sup>	39 / 0.01 <sup>d</sup>	286 / 0.08 <sup>c,d</sup>
0 <sup>a</sup>	0	0	0
Muir Beach Community Services District	0 / 0.00	0 / 0.00	0 / 0.00
Unknown	Unknown	Unknown	Unknown
CSWS (Cal Water)	0 / 0.00	0 / 0.00	0 / 0.00
Unknown	Unknown	Unknown	Unknown
EMWS	0 / 0.00	0 / 0.00	0 / 0.00
Unknown	Unknown	Unknown	Unknown
Unserved Areas (Private Water System / Well)	204 / 0.06 <sup>d</sup>	204 / 0.06 <sup>d</sup>	242 / 0.07 <sup>c,d</sup>
N/A	N/A	N/A	N/A
Total #Units	5,300	16,136	21,829

a. From Table 19-1

b. Number of Units \*596gallons per day(gpd) (NMWD usage number for planning purposes).

c. Accessory Dwelling Units are assumed to use 150gpd.

d. Number of Units \*300 gpd (United States Environmental Protection Agency USEPA, “How We Use Water”, <https://www.epa.gov/watersense/how-we-use-water> : The average American family uses more than 300 gallons of water per day at home.”)

e. Unincorporated Marin County RHNA, “Buffer Sites” and 35% Bonus Density

As seen in Table 19-2, above, projected supply to meet demand for new development varies by District and is affected by drought conditions. Districts such as BCPUD and IPUD would be limited to redevelopment projects which can match or decrease demands to below existing usage within parcels that already have metered water supply or by transferring service from parcels that have become uninhabitable to other parcels which can accommodate development.

In a non-drought year, with a return to Sonoma County Water Agency being able to provide NMWD’s annual entitlement of water, NMWD would be able to allow connections to support development of the “Proposed Project” along with the City of Novato’s RHNA number of required units. However, in the example of the current “dry year” condition, accommodating development of the RHNA number of units for both Unincorporated Marin County and the City of Novato may not be feasible. MMWD is currently able to accommodate new development, but this can change after a few years of negligible precipitation to fill local reservoirs.

B. Existing Water Delivery Infrastructure.

*Marin Municipal Water District:* The MMWD system consists of approximately seven reservoirs, 908 miles of pipeline, 130 storage tanks, 97 pump stations, and three treatment plants.<sup>10</sup>

*North Marin Water District, Novato Service Area:* The NMWD system in Novato consists of approximately one reservoir, one treatment plant, 321 miles of pipeline, 31 storage tanks, and 26 booster pumps.<sup>11</sup>

*North Marin Water District, West Marin Service Area:* The NMWD system in West Marin consists of approximately three wells, one treatment plant, 13 storage tanks, and six booster pumps.<sup>12</sup>

*Stinson Beach County Water District:* The SBCWD system has eight different pressure zones and approximately 1.25 million gallons of storage.

*Muir Beach Community Services District:* The MBCSD system consists of approximately 2.5 miles of waterlines and infrastructure, two service wells, a treatment plant, pump house, and two storage tanks.

C. Water Delivery Infrastructure Needs.

Table 19-3 through Table 19-7 below describe the water delivery infrastructure needs (preliminary) in each of the water districts for the candidate housing sites. As properties are developed or redeveloped, more detailed analyses may be required to determine whether increases in housing unit density, above the density used for master planning of the districts’ systems in that location, would necessitate infrastructure upgrades to support the housing site.

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<sup>10</sup>Marin Water Fact Sheet 2020.

<sup>11</sup>Novato Water System Master Plan Update, 2018.

<sup>12</sup>2014 West Marin Water System Master Plan.

**Table 19-3  
Infrastructure Needs: Marin Municipal Water District (Preliminary)**

<b>Address or APN</b>	<b>Number of Potential Units (Proposed Project)</b>	<b>Number of Potential Units (Candidate Housing Sites)</b>	<b>Infrastructure Needs</b>	
<b>Almonte</b>				
260 Redwood Hwy Frontage Road	36	49	Upsize 460 feet of water main in Pohono and Bolinas Street	
<b>Lucas Valley and Lucas Valley Environs</b>				
7 Mt Lassen Dr	58	78	Upsize 350 feet of water main in Mt. Lassen Drive.	
1501 Lucas Valley Road	26	35	Pump station and water storage tank	
<b>Marin City</b>				
052-140-33 (Alta Ave)	25	34	Booster pump, water storage tank, extend 1,200 feet of water main into property.	
<b>Marinwood</b>				
155 Marinwood	100	184	Upsize 830 feet of water main in Marinwood Ave.	
<b>Strawberry</b>				
Eagle Rock Road	32	43	Extend water main 950 feet into cluster of parcels.	
70 N. Knoll Road	26	35	Extend water main 750 feet into property.	
<b>Unincorporated Fairfax</b>				
2400 Sir Francis Drake Blvd	11	15	Redevelopment in this area will require additional water facilities such as pipeline replacement/upgrade. Minimum 2000 feet water main in Sir Francis Drake Blvd from parcel to Marinda Drive.	
2410 Sir Francis Drake Blvd	25	34	See 2400 Sir Francis Drake Blvd.	
<b>Tamalpais</b>				
049-231-09 (Marin Dr)	0	4	Parcel is in a low pressure/high elevation zone. More infrastructure needed to supply water to site, such as booster pump.	
<b>Kentfield</b>				
139 Kent Ave	53	108	Upsize 1200 feet of water line from parcel to College Avenue.	
<b>San Geronimo Village and San Geronimo Valley</b>				
6001 Sir Francis Drake Blvd	15	5	2-inch service currently runs down the lot. Water pipeline upgrade is needed for service.	
172-350-22 Sir Francis Drake Blvd	0	132	Install additional 1200 feet of distribution pipe to maintain integrity of water transmission system	
33 Castle Rock	10	14	Upsize 1000 feet of water main from parcel to Railroad Avenue.	
<b>Santa Venetia</b>				
200 N San Pedro Rd	84	113	In the "Project Condition" the difference in demand between existing development and proposed housing units is anticipated to be accommodated.	Anticipated that the "Candidate Housing Sites" combination of all housing units (559) proposed in Santa Venetia will require some portion of the water main serving the area to be
1565 Vendola Dr	33	96	In the "Project Condition" the difference in demand	

**Table 19-3  
Infrastructure Needs: Marin Municipal Water District (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs	
			between existing development and proposed housing units is anticipated to be accommodated.	upsized (Preliminary 10,000 feet along N. San Pedro Rd.). Main upgrades may be needed to accommodate the proposed number of units for 200 N San Pedro, 1565 Vendola Dr, 251 N San Pedro Rd and APN 180-261-10.
251 N San Pedro Rd	50	251	In the “Project Condition” the difference in demand between existing development and proposed housing units is anticipated to be accommodated.	
290 N San Pedro Rd	0	7		
294 N San Pedro Rd	0	4		
296 N San Pedro Rd	0	4		
70 San Pablo Ave	0	7		
77 San Pablo Ave	0	16		
180-261-10 (Oxford Drive)	28	61	Upsize 1200 feet of main in Oxford Dr	
<b>Sleepy Hollow</b>				
177-220-41 San Francisco Blvd	7	9	Anticipated that the combination of all housing units proposed in these parcels will require some portion of the water main serving the area to be upsized. Preliminarily, 500 feet of main in San Francisco Blvd.	
4 Sacramento Ave	16	22		
404 San Francisco Blvd	18	24		
60 Sacramento Ave	33	31		
<b>St. Vincent’s</b>				
1 St. Vincent’s Drive	680	2430	Site fronts a main and there is available supply at the site. Extend main 1500 feet.	
<b>Los Ranchitos</b>				
Multiple Addresses in Los Ranchitos neighborhood	0	188	Anticipated that because of the distribution of housing units (2 <sup>nd</sup> units on already-developed properties) throughout the Los Ranchitos neighborhood, the infrastructure will be able to provide water to the added units.	

**Table 19-4:  
Infrastructure Needs: North Marin Water District (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs	
<b>Blackpoint</b>				
275 Olive Ave	53	72	For 300 Olive Avenue in Proposed Project: 2700 feet main extension. Main upgrades may be needed for the development of 275 Olive Ave and 300 Olive Ave. For combination of parcels in Candidate Housing Sites list: 2,700 feet main extension, 3,200 feet main upgrades, 800,000 gal water storage tank, pump station	
300 Olive Ave	58	173		
50 H Lane	0	119		
350 Atherton Ave	0	177		
5 Harbor Dr	0	9	Upsize portion of water main.	
11 Harbor Dr	0	22		
35 Harbor Dr	0	15		
55 Harbor Dr	0	42		
<b>Atherton Corridor</b>				
800 Atherton Ave	147	697	For 800 Atherton Avenue in Proposed Project: 1,500 feet main extension and potentially 5,000 feet of main upgrades, pump station and storage tank for 147 units. For combination of parcels in Candidate Housing Sites list: 1,500 feet main extension, 5,000 feet main upgrades, pump station, 1.0M gallons storage tanks	
618 Atherton Ave	0	36		
654 Atherton Ave	0	62		
<b>North Novato</b>				
2754 Novato Blvd	0	424	5,700 feet main extension, pump station, 800,000 gal storage tanks	
8901 Redwood Blvd	249	336	7,000 feet main extension, pump station, 800,000 gal storage tanks	
<b>Pt. Reyes Station</b>				
9 Giacomini Rd	37	50	Upsize 800 feet of main from inside lot to Shoreline Hwy.	For "Proposed Project" and "Candidate Sites List", proposed development may trigger upgrades to the Point Reyes Treatment Plant.
510 Mesa Rd	24	32	Upsize 600 feet of main from site to Shoreline Hwy.	
60 Fifth St	17	23	Upsize 360 feet of main from site to Shoreline Hwy along 4 <sup>th</sup> St.	
11598 State Route 1	0	80	Extend main 1000 feet into site. Further upsizing may be needed in existing main.	
119-203-01 (Mesa Rd)	2	3	Easement needed. Extend waterline 140 feet into property.	
<b>Olema</b>				
10189 State Route 1	24	32	Pump station, 80,000 gal storage tank	For "Proposed Project" and "Candidate Sites

**Table 19-4:  
Infrastructure Needs: North Marin Water District (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs	
9840 State Route 1	10	14	Pump station, 40,000 gal storage tank	List" proposed development may trigger upgrades to the Point Reyes Treatment Plant. Many of the distribution lines are undersized and looping is lacking in the Olema area.

**Table 19-5:  
Infrastructure Needs: Inverness Public Utility District (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs	
13270 Sir Francis Drake Blvd	13	16		Incorporate storage into IPUD district facilities and district-wide upgrades for design capacity. Confirmation that water source has supply to draw from.
12781 Sir Francis Drake Blvd	0	11		
12784 Sir Francis Drake Blvd	0	14	Limited water use allowed at this parcel because of septic capacity.	
12785 Sir Francis Drake Blvd	0	11		
12786 Sir Francis Drake Blvd	0	14	Limited water use allowed at this parcel because of septic capacity.	
12852 Sir Francis Drake Blvd	0	22	Limited water use allowed at this parcel because of septic capacity.	
13271 Sir Francis Drake	0	129		
10 Balmoral Way	0	3	Water main is only 2" diameter and there are no fire hydrants. Need 550 feet of main upgrade. A Benefit Assessment District would have to be voted into	
112-143-09 (Balmoral Way)	0	8		
20 Balmoral Way	2	3		
30 Balmoral Way	2	3		
40 Balmoral Way	2	3		
45 Balmoral Way	0	3		

**Table 19-5:  
Infrastructure Needs: Inverness Public Utility District (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs
5 Balmoral Way	0	3	existence by property owners along the street.
50 Balmoral Way	2	3	
55 Balmoral Way	2	3	
60 Balmoral Way	2	3	
75 Balmoral Way	2	3	

**Table 19-6:  
Infrastructure Needs: Bolinas Community Public Utility District (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs
1 Olema Bolinas Rd	0	12	Moratorium on new water and sewer connections. Expansion, upgrade and storage would have to be incorporated district-wide into Bolinas Community Public Utility District facilities.
32 Wharf Rd	0	9	
193-020-38 (Mesa Rd)	0	54	

**Table 19-7:  
Infrastructure Needs: Unserved Areas (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs
Nicasio	20	39	Well investigation, well installation, individual storage, treatment systems and private pipeline.
Tomales	118	177	

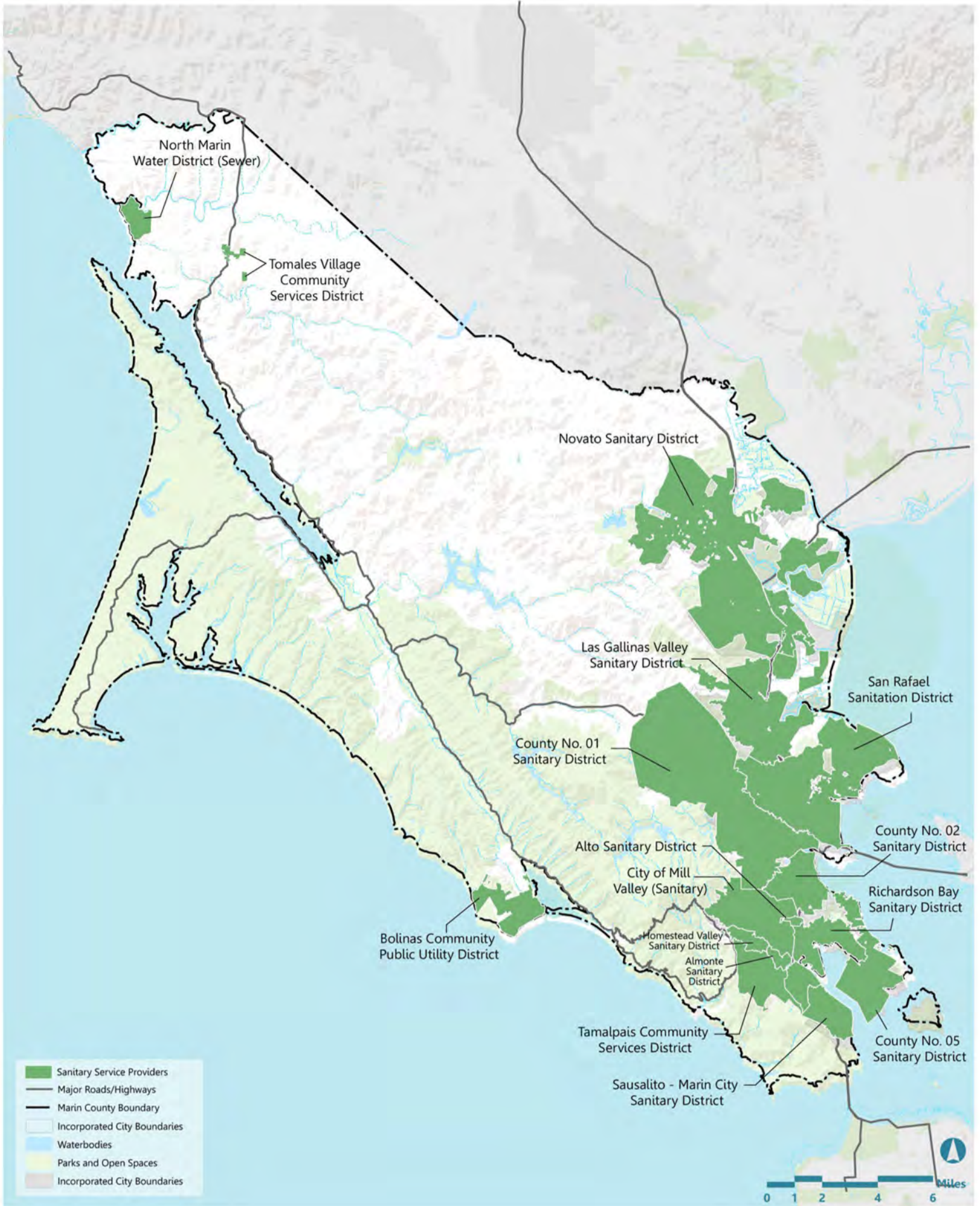
**19.1.2 Wastewater**

**A. Wastewater Collection and Treatment.** There are thirteen sanitary sewer districts and service areas, and six sewage treatment plants in the City-Centered Corridor. Two sewage treatment plants intercept wastewater from more than one sanitary district or service area. There are two districts in West Marin, each with sewer lines and a treatment facility. One of these districts, the Bolinas Community Public Utility District, has a moratorium on new sewer connections that has been in effect since 1985. A potential third district in West Marin, with sewer lines and a treatment facility, is undergoing environmental review for feasibility (see Table 19-8 and Figure 19-2, below).

**Table 19-8:  
 Sanitary Districts/Service Areas and Corresponding Sewage Treatment Plants**

<b>Sanitary District / Sanitary Service Area</b>	<b>Sewage Treatment Plant</b>
City Centered Corridor	
Novato Sanitary District	Novato Sanitary District
Las Gallinas Valley Sanitary District	Las Gallinas Valley Sanitary District
San Rafael Sanitation District	Central Marin Sanitation Agency
Ross Valley Sanitary District	Central Marin Sanitation Agency
Sanitary District No. 2	Central Marin Sanitation Agency
Alto Sanitary District	Sewerage Agency of Southern Marin
Almonte Sanitary District	Sewerage Agency of Southern Marin
City of Mill Valley	Sewerage Agency of Southern Marin
Homestead Valley Sanitary District	Sewerage Agency of Southern Marin
Tamalpais Community Services District	Sewerage Agency of Southern Marin
Richardson Bay Sanitary District	Sewerage Agency of Southern Marin
Sanitary District No. 5	Sanitary District No. 5
Sausalito-Marin City Sanitary District	Sausalito-Marin City Sanitary District
West Marin	
Bolinas Community Public Utility District	Bolinas Community Public Utility District
Tomales Village Community Services District	Tomales Village Community Services District
West Marin – Under Environmental Review for Feasibility	
Woodacre/San Geronimo Flats Wastewater Project	Woodacre/San Geronimo Flats Wastewater Project





**Figure 19.2- Sanitary Sewer Service Districts and Providers**

Generally, the sewage treatment plants have adequate capacity to treat wastewater from their service areas. However, during and for a period of time after rain events, the underground pipe systems collect surface water and groundwater, particularly where the infrastructure is older. In the wastewater industry this is known as inflow and infiltration (I & I). There is typically I & I throughout the year, but when I & I increases during a storm event and is combined with normal wastewater flows, the total amount of effluent in the pipe systems has the potential to overwhelm the capacity of the treatment plants. Various sewage treatment plants in Marin have already or are in the process of completing improvement projects to address potential growth, wet weather capacity issues, and more stringent state and federal regulations. For example, the Sausalito-Marín City Sanitary District completed upgrades to their treatment plant in Fall of 2021 and Novato Sanitary District completed construction and put a new treatment plant into service in 2011.

The sewage pipe systems throughout Marin County vary in whether they are under capacity, or whether they have sufficient capacity. Where pipe systems are under capacity, the reasons may include material age and material condition of the mains and laterals, I & I, and being undersized for the amount of development which ultimately occurred in a general area. Sanitary districts typically develop and periodically update plans for the maintenance and upgrade of their system infrastructure. Part of these plans address mitigating I & I, which helps to address capacity issues in the pipeline systems and at the sewage treatment plants, in addition to preparing to protect sewer infrastructure from potential below- and above-ground impacts from sea level rise. As properties are developed or redeveloped, analyses may be required to determine whether increases in housing unit density, above the density used for master planning of the districts' systems in that location, would necessitate infrastructure upgrades downstream of the housing site.

Table 19-9, below shows sewage treatment capacity by district.

**Table 19-9:  
Existing Wastewater Treatment Capacity**

<b>Wastewater Treatment Agency</b>	<b>Communities Served</b>	<b>Treatment Capacity (MGD<sup>i</sup>, dry-weather flow)</b>	<b>2022 Remaining Capacity (MGD, dry-weather flow)</b>
Sausalito-Marín City Sanitary District	Sausalito, Marin City, Tamalpais Valley, Marin Headlands, Muir Woods and surrounding areas	6 <sup>a</sup>	4.2 <sup>a</sup>
Sewerage Agency of Southern Marin	Mill Valley, Tamalpais Valley, Almonte, Alto, Homestead Valley and surrounding areas	3.6 <sup>b</sup>	1.38 <sup>b</sup>
Sanitary District No. 5	Tiburon, Belvedere and surrounding areas	unknown	unknown
Central Marin Sanitation Agency	San Rafael, Ross Valley, Larkspur, Corte Madera, Kentfield, Greenbrae, Ross, San Anselmo, Fairfax, Sleepy Hollow, Murray Park, San Quentin and surrounding areas	10.0 <sup>c</sup>	unknown
Las Gallinas Valley Sanitary District	San Rafael, Marinwood, Terra Linda, Santa Venetia, Smith Ranch Road, Lucas Valley and surrounding areas	2.9 <sup>d</sup>	unknown

**Table 19-9:  
Existing Wastewater Treatment Capacity**

<b>Wastewater Treatment Agency</b>	<b>Communities Served</b>	<b>Treatment Capacity (MGD<sup>j</sup>, dry-weather flow)</b>	<b>2022 Remaining Capacity (MGD, dry-weather flow)</b>
Novato Sanitary District	Novato and surrounding areas	7.05 <sup>f</sup>	3.77 <sup>g</sup>
Bolinas Community Public Utility District	Bolinas (downtown)	0.065 <sup>h</sup>	0.01 <sup>h</sup>
Tomales Village Community Services District	Tomales	0.038 <sup>i</sup>	0.016 <sup>i</sup>
N/A: On-site wastewater treatment	Where sanitary sewer facilities are not available.	N/A	N/A

a. Sausalito-Marín City Sanitary District Sewer System Management Plan. SMCS D services population of 18,000. (18,000 x 100 (gal/capita)/day = 1.8 MGD) Remaining Capacity = 6 mgd – 1.8 mgd = 4.2 mgd

b. Sewerage Agency of Southern Marin Wastewater Treatment Plant Master Plan: WWTP capacity 3.6mgd average dry weather flow (ADWF). Observed ADWF in 2014 was 2.22 mgd. Remaining Capacity = 3.6 mgd – 2.22 mgd = 1.38 mgd. Anticipated that ADWF will increase to 2.34mgd by 2035 due to population projections used for Master Plan.

c. CMSA 2017 Facilities Master Plan Final Report – October 2018

d. Las Gallinas Valley Sanitary District website “Our Service Area”: <http://www.lgvsd.org/about-us/our-service-area/>

e. Las Gallinas Valley Sanitary District Sewer System Management Plan Capacity Assessment Sept 2008: Wastewater flow projections for 2020

f. Novato Sanitary District Sewer System Management Plan rev. July 2020

g. Novato Sanitary District Wastewater Collection System Master Plan October 2019. NSD projection for 20 years is that base flow will increase to 4.14 mgd

h. BCPUD Sewer System Management Plan. Difference between Maximum Treatment Capacity and average peak dry weather flow on peak generation day

i. The Tomales Village Community Services District Sewer System Management Plan Final 2012

j. Million gallons per day (MGD)

Table 19-10, below shows sewage treatment capacity remaining, by district, after development of three housing scenarios in Marin County: the “Proposed Project” number of housing units, the “Proposed Project” number of housing units with other Marin city and towns’ Regional Housing Needs Allocation (RHNA) units, and the number of “Candidate Housing Sites” with the number of units for other Marin city and towns’ RHNA units. The intent of the “Candidate Housing Sites” is to present a greater number of sites than required, to meet Unincorporated Marin’s RHNA. A combination of sites will be selected from the “Candidate Housing Sites” list to meet the County’s RHNA requirement. The “Proposed Project” reflects the approximate number of housing units proposed to be approved and included in the Countywide Plan.

**Table 19-10:  
Remaining Treatment Capacity after Development**

<b>Current Reserve Treatment Capacity By District<sup>b</sup></b>	<b>Remaining Treatment Capacity by District after Development of County “Proposed Project”</b>	<b>Remaining Treatment Capacity by District after Development of County “Proposed Project” and other City and Town RHNA</b>	<b>Remaining Treatment Capacity by District after Development of County “Candidate Housing Sites” and other City and Town RHNA</b>
<b>Key:</b>			
District Name	Proposed #Units / Generation <sup>a</sup> (MGD)	Proposed #Units / Generation <sup>a</sup> (MGD)	Proposed #Units / Generation <sup>a</sup> (MGD)
Reserve Treatment Capacity Million Gallons per Day <sup>b</sup> (MGD)	Remaining Capacity (MGD)	Remaining Capacity (MGD)	Remaining Capacity (MGD)
Sausalito-Marín City Sanitary District	466 / 0.15	1,190 / 0.38	1,445 / 0.46
4.2	4.05	3.82	3.74
Sewerage Agency of Southern Marin	540 / 0.17	1,405 / 0.44	1,509 / 0.47
1.38	1.21	0.94	0.91
Sanitary District No. 5	0 / 0.00	799 / 0.25	842 / 0.26
Unknown	Unknown	Unknown	Unknown
Central Marin Sanitation Agency	1,080 / 0.34	6,150 / 1.94	6,302 / 1.98
Unknown	Unknown	Unknown	Unknown
Las Gallinas Valley Sanitary District	1,742 / 0.55	3,030 / 0.96	5,630 / 1.76
Unknown	Unknown	Unknown	Unknown
Novato Sanitary District	748 / 0.24	2,838 / 0.90	4,536 / 1.42
3.77	3.53	2.87	2.35
Bolinas Community Public Utility District	18 / 0.01	18 / 0.01	96 / 0.03
0.01	0.00	0.00	-0.02
Tomales Village Community Services District	174 / 0.05	174 / 0.05	198 / 0.06
0.016	-0.034	-0.034	-0.044
Septic	532 / 0.17	532 / 0.17	1,271 / 0.40
-	-	-	-
<b>Total # Units</b>	<b>5,300</b>	<b>16,136</b>	<b>21,829</b>
a. Design Flows vary by district. For this analysis [315gpd/unit = (3.5 persons/residence)(90gpd/person) = 315gpd] from Novato Sanitary District Standard Specifications was applied to estimate flows generated in each District.			
b. From Table 19-8a.			

Large areas of the County are served by on-site wastewater (septic) systems. The County Environmental Health Services office regulates septic systems. Housing development in areas

where on-site wastewater systems are used generally requires more land per dwelling unit to accommodate septic systems within the parcel.

The County utilizes a permitting procedure for the design of new septic systems that requires review of engineering plans. There are two types of septic systems – standard and alternative – to address a range of site-specific factors. Both types of septic systems are subject to the County’s permitting process for wastewater treatment and disposal. Standard septic system design is based on accepted design principles that are assumed to ensure proper functioning of the system for extended periods. Because standard systems are expected to operate properly with property owner maintenance, there is no County inspection process after the initial inspection. Older septic systems within the County are standard septic systems. Alternative septic systems, such as mounded septic systems, those with sand trench disposal fields or systems which incorporate media filtration (i.e. sand filter beds in treatment units), may be necessary when site conditions do not lend themselves to installation of a standard type of system. However, because these are based on newer technologies, ongoing inspections are required to ensure proper operation.

Finding adequate locations to install septic systems combined with septic system setback requirements can limit the potential for construction of multi-family units in the Inland Rural and Coastal Corridors. Properties near streams, baylands, and in the lowlands of the Inland Rural Corridor are heavily constrained by high groundwater, which could be exacerbated by sea level rise in the future. Groundwater affects the depth to which septic drainfield trenches can be constructed. According to the County of Marin Environmental Health Services Department’s “Regulations for Design, Construction and Repair of Individual Sewage Disposal Systems”, depending on soil type and percolation rates through the soil, 3 to 20 feet of clearance is required between the bottom of the drainfield trench and the anticipated highest seasonal level of groundwater. The existence of groundwater within a property can result in limited residential capacity. To increase residential density within a property, site-specific septic investigation in coordination with planning for improvements, sometimes including wells, would be needed to determine how many units the land could feasibly accommodate. Alternatively, if the property is in proximity to a sewer district service area, and connection to the district’s pipeline system is feasible, annexation into the sewer district’s service area could be explored.

**B. Wastewater Infrastructure Needs.** Table 19-11 through Table 19-21 below describe the sanitary sewer infrastructure needs (preliminary) in each of the sewer districts for the candidate housing sites. As properties are developed or redeveloped, more detailed analyses may be required to determine whether increases in housing unit density, above the density used for master planning of the districts’ systems in that location, would necessitate infrastructure upgrades to support the housing site.

**Table 19-11:  
Infrastructure Needs Sausalito/Marin City Sanitary District (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs
<b>Almonte</b>			
260 Redwood Hwy Frontage Road	36	49	Upsize 460 feet of sewer main in Pohono and Bolinas Street

**Table 19-11:  
Infrastructure Needs Sausalito/Marin City Sanitary District (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs
<b>Marin City</b>			
052-140-33 (Alta Ave)	25	34	Extend 1,200 feet of sewer main into property. Ejector pumps for housing units.

**Table 19-12:  
Infrastructure Needs Las Gallinas Valley Sanitary District (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs
<b>Lucas Valley and Lucas Valley Environs</b>			
7 Mt Lassen Dr	58	78	Upsize 350 feet of sewer main in Mt. Lassen Drive.
<b>Marinwood</b>			
155 Marinwood	100	184	Upsize 830 feet of sewer main in Marinwood Ave.
530 Blackstone Dr	32	43	Upsize 1,600 feet of sewer main between site and Las Gallinas Ave
<b>Santa Venetia</b>			
251 N San Pedro Rd	50	251	For number of units in Proposed Project: The difference in sewage flow between existing site (a school) and new development may be able to be accommodated by existing infrastructure. For number of units in Candidate Housing Sites list: Upsize 500 feet of sewer main on south side of parcel and 700 feet of sewer main in Schmidt Ln.
180-261-10 (Oxford Drive)	28	61	Upsize 1200 feet of sewer main in Oxford Dr.
<b>St. Vincent's</b>			
1 St. Vincent's Drive	680	2430	In their 2016 Sewer System Management Plan LGVSD anticipated that development within the St. Vincent's parcel would impact lower portions of their Marinwood pipeline. Their projects "MW-1" and "MW-2" in the master plan had potential to accommodate some additional flows from the St. Vincent site. Additionally, they identified that since this area is close to the treatment plant, a parallel line to their existing system would also be feasible.
<b>Los Ranchitos</b>			
Multiple Addresses in Los Ranchitos neighborhood	0	188	Upsize 2,500 feet of sewer along Los Ranchitos Rd.

**Table 19-13:  
Infrastructure Needs Ross Valley Sanitary District (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs
<b>Unincorporated Fairfax</b>			
2400 Sir Francis Drake Blvd	11	15	Existing sanitary sewer in Sir Francis Drake Blvd is under capacity between site and approximately 500 feet downstream. Upsize main.
2410 Sir Francis Drake Blvd	25	34	See 2400 Sir Francis Drake Blvd.
<b>Kentfield</b>			
139 Kent Ave	53	108	Upsize 1200 feet of sewer line from parcel to College Avenue.
<b>Sleepy Hollow</b>			
177-220-41 San Francisco Blvd	7	9	Anticipated that the combination of all housing units proposed in these parcels may require 1,000 feet of the sewer main in San Francisco Blvd. be upsized to mitigate capacity issues.
4 Sacramento Ave	16	22	
404 San Francisco Blvd	18	24	
60 Sacramento Ave	33	31	

**Table 19-14  
Infrastructure Needs Novato Sanitary District (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs
<b>Blackpoint</b>			
275 Olive Ave	53	72	Annexation required. Construct pump station and extend up to 1.25 mile of sewer force main to site between NSD treatment plant and the site.
300 Olive Ave	58	173	
50 H Lane	0	119	
350 Atherton Ave	0	177	
5 Harbor Dr	0	9	Annexation required. Construct pump station and extend 2,700 feet along Harbor Drive and Stonetree Lane to discharge into NSD pump station.
11 Harbor Dr	0	22	
35 Harbor Dr	0	15	
55 Harbor Dr	0	42	
<b>Atherton Corridor</b>			
800 Atherton Ave	147	697	Some properties in this cluster of parcels are within the Novato Sanitary District Service Area and some are not. Annexation is needed for the parcels which are not in the NSD service area. There are sewer capacity restrictions in the area of this proposed housing site. Potential replacement of 3,300lf of sewer main along Atherton Avenue between Hwy 101 and eastern edge of cluster of parcels is needed to increase pipe size to accommodate added housing units.

**Table 19-14  
Infrastructure Needs Novato Sanitary District (Preliminary)**

<b>Address or APN</b>	<b>Number of Potential Units (Proposed Project)</b>	<b>Number of Potential Units (Candidate Housing Sites)</b>	<b>Infrastructure Needs</b>
618 Atherton Ave	0	36	District maps in the 2019 NSD Collection System Master Plan indicate the nearest manhole the parcel could connect to is 780 feet away. A main extension would be needed. Additionally, there are capacity restrictions in the existing sewer main along Atherton Avenue downstream of the site which could be further affected by additional housing units
654 Atherton Ave	0	62	
<b>North Novato</b>			
2754 Novato Blvd	0	424	Annexation is needed for connection to NSD service. Would need to extend main approximately 1400 feet along Novato Blvd. Potential additional main replacement of 3000 feet between Copper Hill Way and San Carlos Way.
8901 Redwood Blvd	249	336	Annexation is needed for connection to NSD service. Main extension of approximately 2400 feet is needed along Redwood Blvd to serve site.

**Table 19-15:  
Infrastructure Needs Richardson Bay Sanitary District (Preliminary)**

<b>Address or APN</b>	<b>Number of Potential Units (Proposed Project)</b>	<b>Number of Potential Units (Candidate Housing Sites)</b>	<b>Infrastructure Needs</b>
Strawberry			
690 Redwood Hwy Frontage Rd	60	81	Upsize 770 feet of main in Redwood Hwy Frontage Rd to Seminary Drive.
Eagle Rock Road	32	43	Annexation required. Extend water main 950 feet into cluster of parcels and upsize 300 feet of main in Bay Vista Drive to Tiburon Blvd.
043-361-54	46	62	Upsize 600 feet of sewer main in Milland Dr. Extend service into property 650 feet for housing.



**Table 19-16:  
Infrastructure Needs Alto Sanitary District (Preliminary)**

<b>Address or APN</b>	<b>Number of Potential Units (Proposed Project)</b>	<b>Number of Potential Units (Candidate Housing Sites)</b>	<b>Infrastructure Needs</b>
<b>Strawberry</b>			
70 N. Knoll Road	26	35	Annexation required. Extend sewer main 300 feet to property and anticipate extending main into property 750 feet for housing.

**Table 19-17:  
Infrastructure Needs Tamalpais Sanitary District (Preliminary)**

<b>Address or APN</b>	<b>Number of Potential Units (Proposed Project)</b>	<b>Number of Potential Units (Candidate Housing Sites)</b>	<b>Infrastructure Needs</b>
<b>Strawberry</b>			
052-041-27 (Shoreline Hwy)	12	16	Easement and sewer may be needed through 204 Flamingo Rd to serve this site.
204 Flamingo Rd	0	27	Extend sewer main up Flamingo Rd.

**Table 19-18:  
Infrastructure Needs Bolinas Community Public Utility District (Preliminary)**

<b>Address or APN</b>	<b>Number of Potential Units (Proposed Project)</b>	<b>Number of Potential Units (Candidate Housing Sites)</b>	<b>Infrastructure Needs</b>
1 Olema Bolinas Rd	0	12	Moratorium on new water and sewer connections. Expansion, upgrade would have to be incorporated district-wide into Bolinas Community Public Utility District facilities.
32 Wharf Rd	0	9	
193-020-38 (Mesa Rd)	0	54	

**Table 19-19:  
Infrastructure Needs Tomales Village Community Public Utility District (Prelim)**

<b>Address or APN</b>	<b>Number of Potential Units (Proposed Project)</b>	<b>Number of Potential Units (Candidate Housing Sites)</b>	<b>Infrastructure Needs</b>
All candidate parcels	118	177	Wastewater treatment plant upgrades may be needed to increase treatment capacity before candidate housing sites can be developed.

**Table 19-20:  
Infrastructure Needs San Rafael Sanitation District (Preliminary)**

<b>Address or APN</b>	<b>Number of Potential Units (Proposed Project)</b>	<b>Number of Potential Units (Candidate Housing Sites)</b>	<b>Infrastructure Needs</b>
<b>California Park</b>			
329 Auburn St	120	174	Up-size existing 8” main to 10” or 12” from Woodland Ave down to Bellam Blvd where the pipe increases in diameter to 12”. The existing 8” main passes under the 36” force main at the intersection of Woodland Ave and Bellam Blvd which, according to Sanitation District as-built records, has less than 12” separation, which may preclude installing a larger diameter gravity pipe. Potholing at this crossing would be in order to verify the pipe separation.

**Table 19-21:  
Infrastructure Needs Unserved Areas (Preliminary)**

<b>Address or APN</b>	<b>Number of Potential Units (Proposed Project)</b>	<b>Number of Potential Units (Candidate Housing Sites)</b>	<b>Infrastructure Needs</b>
Inverness	25	255	Confirmation of existing septic system condition and capacity, site investigation for potential new septic areas, expansion of existing septic systems and installation of new septic systems where capacity can be found.
Nicasio	20	39	
Pt. Reyes Station	160	394	
Forest Knolls	10	30	
Lagunitas	46	63	
Olema	60	133	
Stinson Beach	13	37	
San Geronimo Village	15	5	

**Table 19-21:  
Infrastructure Needs Unserved Areas (Preliminary)**

Address or APN	Number of Potential Units (Proposed Project)	Number of Potential Units (Candidate Housing Sites)	Infrastructure Needs
San Geronimo Valley	10	185	Discharge to future wastewater treatment plan if possible. Otherwise, Confirmation needed for existing septic system condition and capacity, site investigation for potential new septic areas, expansion of existing septic systems and installation of new septic systems where capacity can be found.

### 19.1.3 Storm Drainage

**A. Local Topography and Drainage.**<sup>13</sup> Marin County topography is diverse, with rolling hills, valleys, and ridges that extend from northwest to southeast. Elevations vary considerably, from the tallest peak in the County (Mt. Tamalpais, which is approximately 2,570 feet above mean sea level [MSL]), to interior valleys ranging between 10 to several hundred feet above MSL. Shoreline areas in the west range from beaches and mudflats at sea-level to coastal bluffs in the west of several hundred to 1,000 feet in height. The major Marin County watersheds are bisected by streams that enter San Pablo and San Francisco Bays to the east and south, and Tomales Bay, the Pacific Ocean, and Bodega Bay to the west.

**B. Rainfall and Runoff.**<sup>14</sup> Marin County has a mild Mediterranean climate, characterized by long dry summers and rainy winters. Rainfall can average between 30 to 61 inches per year. Coastal fog is common, especially in late summer when it provides an important source of precipitation.

**C. Existing Storm Drainage Infrastructure.** Throughout Marin County, storm drainage infrastructure includes a range of conveyance facilities from vegetated and concrete-lined swales and ditches, curb and gutter systems, bridges and culverts for stream crossings, underground pipe systems, detention ponds, and various stormwater quality treatment facilities.

**D. Storm Drainage Infrastructure Needs.** Generally each housing site will require a combination of types of storm drainage infrastructure to convey runoff away from and around buildings and to safely convey the runoff to existing drainage facilities beyond the boundary of the parcel(s) to follow the Marin Countywide Stormwater Pollution Prevention Program and meet State and County requirements, as more fully described in Chapter 12, Hydrology and Water Quality, of this EIR. Table 19-22 shows candidate housing sites that appear to require infrastructure such as culverts or bridges for access into the site.

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<sup>13</sup>Marin County Community Development Agency, Planning Division, Marin County Watershed Management Plan Administrative Draft, April 2004.

<sup>14</sup>Marin County Watershed Management Plan Administrative Draft.

**Table 19-22:  
 Infrastructure Needs Storm Drainage (Preliminary)**

Address or APN	Number of Potential Units	Infrastructure Needs
Almonte		
200 Redwood Hwy Frontage Rd	36	Bridge or culvert at Mill Valley-Sausalito path to accommodate future sea level rise.
Strawberry		
Eagle Rock Road	43	Bridges over streams needed to be able to access parcels.
Pt. Reyes Station		
11598 State Route 1	80	Bridge over stream to be able to access parcel.
Santa Venetia		
1565 Vendola	96	Bridge may be needed if egress is constructed to N. San Pedro Rd.

Construction of new impervious surfaces such as roofs and pavements may increase the peak flow and volume of runoff from a development. If existing, offsite drainage infrastructure has not already been sized to accommodate potential increases in runoff, municipal criteria and codes typically require that on-site mitigation such as low impact development infrastructure and/or detention facilities be provided. Low impact development infrastructure includes, but is not limited to, cisterns, bioretention ponds, bioretention planters and pervious pavements with storage capacity for runoff capture. Detention facilities include, but are not limited to, underground pipe storage and ponds. This infrastructure reduce the development’s potential to impact downstream storm drain systems and keep site runoff at or below pre-project conditions. These requirements typically help preclude the need for a project to address offsite storm drainage capacity issues.

However, when maximizing the potential for housing within a parcel, which increases roof and pavement coverage, onsite mitigation-related drainage infrastructure can become complex and result in high drainage-related construction and maintenance costs.

**19.1.4 Solid Waste Disposal and Recycling**

The County contracts with the Marin County Hazardous and Solid Waste Joint Powers Authority, known as Zero Waste Marin, to administer zero-waste programs and solid waste collection franchises for the unincorporated areas of the County. Zero Waste Marin is a State-approved regional agency that works to reduce disposal in landfills and promotes recycling and the proper handling of household hazardous wastes. It develops and implements the County's Regional Integrated Waste Management Plan and administers the Marin Countywide Hazardous Waste Management Plan. Solid waste collection in the County is managed by 22 franchising agencies including 10 of the 11 cities, 11 special districts, and the County. Each agency franchises with one of five private haulers, except for one special district that provides its own service.

Redwood Landfill and Recycling Center, located north of Novato, is the only permitted landfill operating in the County since the closure of the West Marin Landfill in 1998. This Class III disposal facility is privately owned and operated by Waste Management, and received its most current Solid Waste Facilities Permit (SWFP) on October 13, 2014, issued by CalRecycle. The landfill occupies a total of 384.8 acres with a disposal area of 222.5 acres. The landfill has a current permitted maximum daily disposal capacity of 2,310 tons per day which includes 1,390

tons of municipal source waste. Its total permitted traffic volume is 662 vehicles, of which 50 are for employees.

The landfill's design capacity is currently 26.08 million cubic yards and its estimated closure date is 2036, although increased recycling and resource recovery activities throughout the county may extend the life span of this landfill.<sup>15</sup> In 2021, the landfill received a total of approximately 300,000 tons of waste from the County.<sup>16</sup> In addition to disposing of municipal solid waste, the landfill also disposes of construction waste and non-hazardous sewage sludge, and has the largest composting facility in Marin County (its "Homegrown Compost" is approved for organic farming and has an ultimate capacity of 400 tons per day of feedstock).<sup>17</sup>

Collection of separated recyclables is available to all single-family residences, multi-family complexes, and businesses throughout the county. Most of the collected materials are processed at the Marin Recycling Center in San Rafael. Additional resource recovery services are provided at the Marin Resource Recovery Center (MRRC) in San Rafael. These facilities are also privately owned and operated. The County also operates a waste transfer station at this location. Together, the non-recycled wastes from the transfer station and MRCC are disposed of at the Redwood Landfill.

In 2021, the MRCC generated 84,743 total vehicle trips and received a total of 243,707 tons of waste. During that same time, the Transfer Station had 13,616 total vehicle trips and handled 56,310 tons of waste. Together, these facilities generated 97,796 total vehicle trips and received a total of 300,017 tons waste. In 2021, these facilities produced 167,831 tons of recycled materials, which represents 56 percent of the total wastes received for 2021.

The County's waste management system is further described in the Source Reduction and Recycling Element of the County Integrated Waste Management Plan, which was prepared in accordance with the California Integrated Waste Management Act of 1989 (AB 939). This Element identifies a course of action for meeting the State's mandate of diverting 25 percent of the waste stream from disposal by 1995 and 50 percent by the year 2000. Diversion may include source reduction, recycling, composting, and limited transformation, such as wood incineration.

In 1990, city-specific diversion rates in the County ranged from 16 percent to 36 percent while the County's unincorporated diversion rate in 1995 was 32.8 percent. In 2021, the County's diversion rate was 56 percent based on the monthly Marin Resource Recovery Center Tonnage Report forms for 2021. All of these rates exceed the 25 percent and 50 percent diversion mandates under the Integrated Waste Management Act, which have been adopted by the County and each city in the County.

The Marin County Hazardous and Solid Waste Joint Powers Authority (MCHSWJPA) is the agency responsible for implementing the household hazardous waste collection project throughout the County. Through the MCHSWJPA, the County has sponsored periodic collection

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<sup>15</sup>*Solid Waste Facility Permit (SWFP), Redwood Landfill, Facility 21-AA-0001*, Marin County Environmental Health Services, CalRecycle Concurrence Date October 13, 2014.

<sup>16</sup>*Redwood Landfill Solid Waste Facility Permit (SWFP) 21-AA-0001, Quarterly Report of Self-Monitoring and Operations (Q1 through Q4 2021)*. April 28, 2022.

<sup>17</sup>*Nondisposal Facility Element*, Marin County Hazardous and Solid Waste Management Joint Powers Authority. January 29, 2010; *SWFP 21-AA-0001*, 2022.

days for household hazardous waste (HHW) for Marin County and its cities since 1986. These events have increased public awareness of what constitutes household hazardous waste and how it should be properly managed. Marin Sanitary Service, in conjunction with the City of San Rafael, has been operating a permanent HHW collection facility in San Rafael since 1995. In December 1996, the HHW collection program in San Rafael was contracted by the MCHSWJPA to extend service to all of Marin's jurisdictions, except for the City of Novato. Since 1996 the City of Novato has separately operated its own HHW collection program with the Novato Sanitary District for Novato residents and businesses. The permanent HHW facility in San Rafael is open year-round for disposal purposes for county residents. Residents may also dispose of their HHW at satellite collection events or at the mobile unit. The mobile and satellite HHW collection programs are operated on an as-needed basis by local jurisdictions.<sup>18</sup>

### 19.1.5 Other Utilities (Electrical, Natural Gas, Telecommunications)

**A. Electricity and Natural Gas.** The Pacific Gas and Electric (PG&E) Company provides gas and electric service to the residents and businesses of Marin County. Residential electrical consumption has been slowly climbing since 1995.<sup>19</sup> According to PG&E and the California Energy Commission (CEC), county-wide residential electrical consumption increased from 619 million kilowatt hours (kWH) in 1995 to 734 million kWH in 2000 and leveled off to 700.3 million kWH by 2020. Non-residential energy consumption also increased from 646 million kWH in 1995 to 834 million kWH in 2000 but then decreased back to 629.7 million kWH by 2020. PG&E has been making continual improvements to the delivery system and expects to be able to provide energy resources to meet anticipated demand as growth occurs in the future. In addition to maintaining adequate capacity, PG&E is continuing its program to underground existing electrical lines as funds become available.

For natural gas, the CEC estimates county-wide natural gas consumption in 2020 was 5,040 million cubic feet (Mcf) for residential uses and 1,680 Mcf for non-residential uses.<sup>20</sup>

The California Legislature changed the distribution and supply of energy in 1996 when it enacted laws that deregulated the energy industry. This resulted in a significant increase in electricity and gas bills to Marin residents when the law went into effect in northern California in late 2000. Depending on state or regional supply constraints or periods of high demand, the California Independent System Operator (CAISO) decides when rotating outages are necessary to reduce demand on the electric power grid.<sup>21</sup>

From 2017 to 2021, northern California experienced a number of massive wildfires and subsequent lawsuits that resulted in extensive damage, loss of life and homes, and liability for PG&E in instances where the company was found at fault. For example, the August Complex Fire in 2020 and the Dixie Fire in 2021 each covered approximately a million acres, and PG&E's power lines were later found to be responsible for the start of the Dixie Fire. The wildfires and lawsuits affected operations and maintenance and resulted in blackouts and service

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<sup>18</sup>*Nondisposal Facility Element*, Marin County Hazardous and Solid Waste Management Joint Powers Authority. January 29, 2010.

<sup>19</sup>*California Energy Commission (CEC), Electric and Natural Gas Consumption by County*. CEC Website accessed July 2022 [www.ecdms.energy.ca.gov/elecbycounty.aspx](http://www.ecdms.energy.ca.gov/elecbycounty.aspx) and [www.ecdms.energy.ca.gov/gasbycounty.aspx](http://www.ecdms.energy.ca.gov/gasbycounty.aspx).

<sup>20</sup>CEC, *Electric and Natural Gas Consumption by County*. July 2022.

<sup>21</sup>CEC, *Electric and Natural Gas Consumption by County*. July 2022.

interruptions in many areas. In September 2021, PG&E filed for Chapter 11 bankruptcy protection. The reorganized PG&E will continue to own and operate the existing retail electric and natural gas distribution system. As a result of active power lines contributing to wildfires, PG&E now has the authority to initiate Power Service Interruptions (PSI) and temporarily deactivate power lines for either maintenance or public safety related to shelter-in-place orders in areas with high winds during wildfires.

**B. Telecommunications.** Telecommunications is the transmission of information from one point to one or more other points using a variety of signals which are transmitted via copper wire for telephones, video (frequency over coaxial cable or co-ax), data (digital signals over copper, co-ax and fiber optic cable), wireless voice data, TV, AM/FM radio, two-way radio, and satellite transmissions for voice, radio, data and TV. Transmitting antennas are used to broadcast or direct a radio frequency signal, which is picked up by receiving devices such as receiving antennas, television sets, radios, or cellular telephones (Marin 1998).

Two hardline phone companies, SBC and Verizon, provide basic telephone service in Marin County. Verizon serves the Novato area and SBC serves the remainder of Marin County. Residents have the option of choosing between various long distance telephone service providers due to deregulation of the telephone industry in California in 1996.<sup>22</sup>

Wireless telecommunication services are provided to county residents and businesses by a number of private companies. Among the users of telecommunication facilities are cable television companies. Comcast/Xfinity is the primary provider of cable television in the county. The west Marin County area is served by West Marin Cablevision. Some companies also provide cable television services either separately or bundled with telecommunication services.

The siting of telecommunications facilities has implications for land use policy in Marin County, depending on whether the facilities are a major facility or use of a property, such as a transmitter tower site, or a minor use accessory to a residential or commercial development, such as satellite dish antennas for single-family residences. Many primary telecommunications facilities must be located on ridgetops to be effective. The siting of these facilities may conflict with the ridge and upland greenbelt policies contained in the Countywide Plan. However, the County must accommodate telecommunication facilities and mitigate their potential adverse impacts by regulation because such facilities provide essential services. In addition, federal and state regulations do not allow total prohibition or unreasonable regulation of telecommunications services. The County implements a Telecommunication Facilities Policy Plan<sup>23</sup> that addresses the issues noted above.

In the past, telecommunications technologies required a network of antennas mounted on tall transmission towers spaced miles apart (e.g., 3G and 4G cell towers). These towers were strategically distributed to form a regional network to allow line-of-sight communication between transmitters and receivers. In contrast, current 5G antennas require a dense network of closely spaced antennas that can be installed on utility poles and buildings that are closer to the user base, such as in urban areas. These antennas are smaller, more numerous facilities mounted

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<sup>22</sup>Marin Countywide Plan, Community Facilities Element, Technical Background Report, Provision of Services in Marin County. Marin County Community Development Agency, February 7, 2003.

<sup>23</sup>[https://www.marincounty.org/media/files/departments/cd/planning/currentplanning/publications/planning-applications/telecomm\\_chklist-6415.pdf](https://www.marincounty.org/media/files/departments/cd/planning/currentplanning/publications/planning-applications/telecomm_chklist-6415.pdf)

on utility poles within road rights-of-way. These newer technology antennas are about the size of a tool cabinet but have more limited coverage distance (i.e., less than 1,000 feet).

The Federal Communications Act gave the Federal Communications Commission (FCC) authority to preempt local regulations prohibiting or discriminating against building or expanding telecommunications facilities. The California State Public Utilities Commission (CPUC) also regulates some telecommunications facilities that are considered public utilities. The CPUC's primary duties are determining the necessity for the service, operating in compliance with State regulations, approving fee schedules, and serving as the lead agency for environmental review. The CPUC has concluded that local jurisdictions cannot prohibit or restrict utilities such as cellular phone installations. Local regulations can prescribe land use and construction guidelines for telecommunication facilities but cannot prohibit the use of a site if there is no reasonable alternative site. The FCC and the CPUC can prevent local decisions through commission orders that have the force of law and can require violators to go to court.

The County's goal regarding telecommunications is to improve its infrastructure to support the coming generations of wireless telecommunications services. The FCC adopted new requirements on September 26, 2018, which streamlined and removed regulatory barriers that were perceived to inhibit the deployment of advanced wireless communications services. The FCC's actions placed new limits on state and local governments' regulatory authority over small wireless infrastructure located within the public rights-of-way, established limits on the amount of fees that can be charged for use of publicly owned utility poles for the installation of telecommunications equipment (such as antennas) as well as the amount of fees that can be charged for the review of telecommunications facilities. Also included in the FCC's action are more stringent deadlines for local government to process small wireless applications, and stricter limits on local government's ability to require undergrounding of equipment and application of aesthetic considerations in their review of small wireless telecommunications facilities.

Under existing County policy<sup>24</sup> and development regulations, any application to install a new telecommunications facility within the unincorporated area of Marin County will require approval from the County. Existing County policy emphasizes the use of stealth design for antenna facilities, supports co-location of antennas to minimize visual clutter, and establishes preferences for siting telecommunications facilities in industrial and commercial areas over residential areas. Within the parameters established by the FCC, the County may place limits on the location and design of antenna and equipment that make up the antenna array. However, the County cannot deny a proposed telecommunications facility or require modifications based solely upon potential adverse health effects from exposure to electromagnetic field (EMF) emissions when the facility complies with the federal standard for permissible human exposure to EMF.

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<sup>24</sup> [https://www.marincounty.org/media/files/departments/cd/planning/currentplanning/publications/planning-applications/telecomm\\_chklist-6415.pdf](https://www.marincounty.org/media/files/departments/cd/planning/currentplanning/publications/planning-applications/telecomm_chklist-6415.pdf)



## 19.2 REGULATORY SETTING

### 19.2.1 Water

#### 19.2.1.1 Federal

**U.S. Environmental Protection Agency.** The U.S. Environmental Protection Agency (EPA) is responsible for developing and enforcing regulations that implement environmental laws enacted by Congress. EPA is responsible for researching and setting national standards for a variety of environmental programs, including the Safe Drinking Water Act (SDWA), passed in 1974 and since amended, which is the federal law that protects public drinking water supplies throughout the nation. Under the SDWA, EPA sets standards for drinking water quality and with its partners implements various technical and financial programs to ensure drinking water safety.

#### 19.2.1.2 State

**Porter-Cologne Water Quality Control Act.** The Porter-Cologne Act is the principal State law governing water quality regulation in California, and applies to surface waters, wetlands, and groundwater, as well as regulation of both point and nonpoint sources of pollution. The Porter-Cologne Act implements provisions of the CWA, such as the National Pollution Discharge Elimination System (NPDES) permitting program, through the State Water Resources Control Board and nine Regional Water Quality Control Boards, which issue permits for point source discharges. Other State agencies with jurisdiction over water quality regulation in California include the California Department of Health Services (DHS) (for drinking water regulations), the California Department of Pesticide Regulation, and the Office of Environmental Health and Hazard Assessment (OEHHA).

**California Safe Drinking Water Act.** The California Safe Drinking Water Act (SDWA) was enacted by the California State Legislature in 1976 (amended), to enforce the federal SDWA and ensure that the state's drinking water standards are at least as stringent as U.S. EPA standards.

**California Water Code.** The California Water Code is the governing law for all aspects of water management in California, including recycled water. In addition, California Code of Regulations, Title 17, Division 1 and Title 22, Division 4, provides technical standards for water quality, as further defined by the California Regional Water Quality Control Board.

**Water Conservation Act of 2009.** Also known as Senate Bill (SB) 7x7, the Water Conservation Act of 2009 established a comprehensive package of water conservation legislation. In general, the Act requires a 20 percent reduction in per capita urban water use by 2020. The Act also requires urban water users to develop consistent water use targets and to use those targets in their urban water management plans (UWMPs).

**Senate Bills 610 and 221, Water Supply Assessment and Verification.** Senate Bills (SB) 610 and 221 amended State law to improve the link between the information on water supply availability and certain land use decisions made by cities and counties. Both statutes require detailed information regarding water availability (water supply assessment or WSA) to be provided to city and county decision-makers prior to approval of specified large (greater than 500 dwelling units) development projects. Both statutes require this detailed information to be included in the administrative record. Under SB 610, WSAs must be furnished to local

governments for inclusion in any environmental document for certain projects as defined in Water Code section 10912, subject to the California Environmental Quality Act (CEQA). Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply.

**Urban Water Management Planning Act.** In 1983 the California Legislature enacted the Urban Water Management Planning Act (Water Code sections 10610–10656). The Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet (af) annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act requires that urban water suppliers adopt an urban water management plan (UWMP) at least once every five years and submit it to the Department of Water Resources. Noncompliant urban water suppliers are ineligible to receive funding pursuant to Division 24 or Division 26 of the California Water Code, or receive drought assistance from the State, until the UWMP is submitted and deemed complete pursuant to the Urban Water Management Planning Act.

**California Department of Water Resources.** The California Department of Water Resources is responsible, in cooperation with other agencies, for managing the water resources of the state. Most important is the operation of the State Water Project, which supplies water to public water systems that serve the majority of state residents. The Department is also responsible for developing the California Water Plan, which serves as a guide to the development and management of the state’s water resources.

**State Water Resources Control Board.** The State Water Resources Control Board (SWRCB) oversees public water systems, and has oversight of water recycling projects, issuance of water treatment permits, and certification of drinking water treatment and distribution operators. In addition, through the Drinking Water Programs, the SWRCB regulates public water systems and enforces the federal and State Safe Drinking Water acts, including performing field inspections, reviewing plans and specifications for new facilities, taking enforcement actions for non-compliance with laws and regulations, reviewing water quality monitoring results, and supporting and promoting water system security.

**Sustainable Groundwater Management Act.** The Sustainable Groundwater Management Act was enacted in 2014 to provide for local governmental management of groundwater basins. The Act establishes minimum standards for sustainable groundwater management in order to halt overdraft conditions and bring basins into balanced levels of pumping and recharge, as well as avoid groundwater-storage reductions, seawater intrusion, water-quality degradation, land subsidence, and surface-water depletions. Groundwater basins classified as medium to high priority require preparation of groundwater sustainability plans by the local groundwater sustainability agency, formed with authority from the State to manage groundwater resources.

**California Green Building Standards Code (“CALGreen Code”).** Part 11 of the Title 24 Building Standards Code is referred to as the California Green Building Standards Code. The purpose of the CALGreen Code is to “improve public health, safety and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality.” The CALGreen Code is not intended to substitute or be identified as meeting the

certification requirements of any green building program that is not established and adopted by the California Building Standards Commission (CBSC).

### 19.2.1.3 Regional/Local

**Marin Municipal Water District.** The Marin Municipal Water District (MMWD) provides water to the eastern corridor of Marin County, not including Novato, and serves the largest customer base in Marin. The 2020 Urban Water Management Plan for Marin Municipal Water District (UWMP) addresses the District's water system, as required by state law and describes the District's historical and projected water demands, water supplies and supplemental water sources, supply reliability and potential vulnerabilities, water shortage contingency planning, and demand management programs. The Marin Municipal Water District Water Resources Plan 2040 evaluates District resiliency to potential threats to the water resources in its service area and also identifies options for enhancing resiliency to better serve the District's customers. The Plan uses computer simulations in determining baseline operational yield of the reservoir system and making water supply planning decisions.

**North Marin Water District.** North Marin Water District (NMWD) serves the City of Novato and the Point Reyes, Inverness, Olema and Oceana Marin areas of West Marin, with a population of approximately 61,381 people. The 2020 Urban Water Management Plan for the North Marin Water District (UWMP), prepared to comply with State water law, addresses the District's Novato Water System, historical and projected water demands, water supplies, supply reliability and potential vulnerabilities, water shortage contingency planning, and demand management programs. The District also operates the West Marin Water System, but due its small size – 770 connections serving approximately 1,800 people – it is not required to have a UWMP. NMWD also prepared a Water Shortage Contingency Plan 2020 Update to provide the framework for responding to future water supply shortages, including the stages of response to a water shortage caused by drought or by supply interruptions due to infrastructure failure, regulatory mandate, or catastrophic human-caused or natural events. The main objective of the Plan is to have in place the resources and management responses necessary for the District to protect health and human safety, minimize economic disruption, and preserve environmental and community assets during water supply shortages and interruptions.

**Stinson Beach County Water District.** Stinson Beach County Water District serves a population of 608 permanent residents and up to 15,000 residents on the weekends and holidays. SBCWD's jurisdictional boundary encompasses approximately 10 square miles along the Pacific Ocean coast in West Marin.

**Inverness Public Utility District.** Inverness Public Utility District serves an estimated population of 1,100 in a service area encompassing approximately 2.5 square miles in West Marin at the southern end of Tomales Bay.

**Bolinas Community Public Utility District.** Bolinas Community Public Utilities District serves an estimated population of 1,620 within a jurisdictional boundary of 2.6 square miles in west Marin where the edge of Bolinas Bay meets the Pacific Ocean.

**Muir Beach Community Services District.** Muir Beach Community Services District serves 159 customers within a jurisdictional boundary of approximately 1.3 square miles in West Marin adjacent to the Pacific Ocean coast.

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses water management in the following policies:

**Natural Systems and Agriculture Element – Water Resources policies**

- Policy WR-3.1: Conserve Water and Develop New Sustainable Sources. Reduce the waste of potable water through efficient technologies, conservation efforts, and design and management practices, and by better matching the source and quality of water to the user's needs.
- Policy WR-3.2: Mitigate Water Demand in New Development. Assess and mitigate the impacts of new development on potable water supplies and water available for wildlife.
- Policy AG-1.12: Support Sustainable Water Supplies. Explore opportunities to provide sustainable water supplies, such as water conservation, collection, treatment, and reuse, to support small-scale agricultural diversification in a manner that does not adversely affect aquatic or other resources.

**Built Environment Element – Community Development policies**

- Policy CD-1.2: Direct Urban Services. Discourage extension of urban levels of service to serve new development beyond urban service areas.
- Policy CD-5.1: Assign Financial Responsibility for Growth. Require new development to pay its fair share of the cost of public facilities, services, and infrastructure, including but not limited to transportation, incremental water supply, sewer and wastewater treatment, solid waste, flood control and drainage, schools, fire and police protection, and parks and recreation. Allow for individual affordable housing projects to be exempted from the full cost of impact fees, subject to meeting specified criteria.
- Policy CD-5.2: Correlate Development and Infrastructure. For health, safety, and general welfare, new development should occur only when adequate infrastructure is available, consistent with the following findings: ...
  - e. Wastewater, water (including for adequate fire flows), and other infrastructure improvements will be available to serve new development by the time the development is constructed.

**Built Environment Element – Public Facilities and Services policies**

- Policy PFS-1.1: Require Cost-Sharing. Require new development to pay for the infrastructure it requires and the public services it receives.
- Policy PFS-1.2: Plan Effectively to Minimize Costs. Plan public facilities in cooperation with service providers to minimize short- and long-term construction, operation, and maintenance costs.
- Policy PFS-1.3: Discourage Privatization and Commercialization. Encourage public ownership of utilities and public service facilities by not authorizing privatization of water, sewer, law enforcement, emergency service, school, and other essential services. Consider prohibiting corporate sponsorship and commercially driven naming rights of public facilities and lands as a means to fund maintenance and improvements.
- Policy PFS-1.4: Reduce Demand on Public Facilities. Reduce per capita and total demand for water and wastewater treatment, and enhance storm water management

through integrated and cost-effective design, technology, and demand reduction standards for new development and redevelopment.

- Policy PFS-2.1: Conserve Water and Utilize Sustainable Sources. Promote conservation to increase the responsible use and reliability of water supplies. Reduce the waste of potable water through efficient technologies, design, and management practices, and through better matching of the source and quality of water to the user's needs.
- Policy PFS-2.2: Mitigate Increased Water Demand in New Development. Work with local water agencies to mitigate increases in water demand due to new development by supporting water efficiency programs that decrease demand by a similar amount.
- Policy PFS-2.3: Manage Water Resources Sustainably. Manage water resources to ensure equitable amounts of clean water for all users, to support wildlife habitat, and to preserve natural resources within the sustainable limits of water supplies. (See also the Natural Systems and Agriculture Element, Water Resources Section.)

**Marin County Code.** Chapter 20.20.060 (Water supply) discusses County requirements pertaining to providing adequate water for development projects. Chapter 23.10 (Water Efficiency in Landscaping) discusses minimum criteria for water efficiency standards to protect Marin County water resources.

**Marin County Local Coastal Plan Land Use Plan.** The Marin County Local Coastal Land Use Plan (2018) governs land development in the Marin County Coastal Zone and includes policies pertaining to agriculture, biological resources, environmental hazards, mariculture, water resources, community design, community development, energy, housing, public facilities and services, transportation for the communities in the coastal zone (i.e., Muir Beach, Stinson Beach, Bolinas, Olema, Point Reyes Station, Inverness, East Shore, Tomales, Dillon Beach).

**Marin County Community Development Agency, Building and Safety Division.** Prior to issuance of a Building Permit, the Building and Safety Division requires project applicants to provide a letter from the appropriate water district regarding availability of water service, including district certification that a water meter exists or is available and that arrangements have been completed for water service, or, if a well or other water supply is proposed as the water supply, then a letter of approval from the Environmental Health Division is required.

## 19.2.2 Wastewater

### 19.2.2.1 Federal

**U.S. Environmental Protection Agency.** The U.S. Environmental Protection Agency (EPA) Office of Wastewater Management (OWM) supports the Federal Water Pollution Control Act (Clean Water Act, CWA) by promoting effective and responsible water use, treatment, disposal, and management, and by encouraging the protection and restoration of watersheds. The OWM is responsible for directing the National Pollutant Discharge Elimination System (NPDES) permit, pretreatment, and municipal bio-solids management (including beneficial use) programs under the CWA. The OWM is also home to the Clean Water State Revolving Fund that provides communities a permanent, independent source of low-cost financing for a wide range of water quality infrastructure projects.

**Clean Water Act.** The CWA is the cornerstone of surface water quality protection in the United States. The statute employs a variety of regulatory and non-regulatory tools to sharply reduce

direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff.

#### 19.2.2.2 State

**State Water Resources Control Board.** The SWRCB, in coordination with nine RWQCBs, performs functions related to water quality, including issuance and oversight of wastewater discharge permits (e.g., NPDES), other programs regulating stormwater runoff, and underground and above-ground storage tanks. The RWQCB requires all wastewater collection and disposal providers to prepare a Sewer System Management Plan (SSMP) according to the Statewide General Order Waste Discharge Requirements for Sanitary Sewer Systems.

**California Code of Regulations.** Title 17 (drinking water supplies) and Title 22 (recycled water, including standards and uses of disinfected tertiary water) regulate water distribution and water quality. Regulation of reclaimed water is governed by the nine RWQCBs and the California Department of Public Health (CDPH).

#### 19.2.2.3 Local

**Almonte Sanitary District.** Sanitary District serving unincorporated area south of the City of Mill Valley.

**Alto Sanitary District.** District serving the Alto unincorporated area of Marin County.

**Bolinas Community Public Utilities District.** District providing sewage collection and treatment for the Town of Bolinas.

**Homestead Valley Sanitary District.** District providing sewage collection for the Homestead Valley Unincorporated area.

**Las Gallinas Valley Sanitary District.** District providing sewage collection and treatment for the Marinwood, Lucas Valley, Terra Linda, Santa Venetia, Los Ranchitos and Smith Ranch Road areas of Marin County.

**Novato Sanitary District.** Sewage collection, treatment and disposal for the City of Novato and some surrounding areas.

**Ross Valley Sanitary District.** Sewage collection and transport to the Central Marin Sanitation Agency for the Bon Air, Fairfax, Greenbrae, Larkspur, Kentfield, Kent Woodlands, Murray Park, Ross, San Anselmo, Sleepy Hollow and Oak Manor areas of Marin County.

**San Rafael Sanitation District.** Sewage collection and transport to the Central Marin Sanitation Agency for the City of San Rafael.

**Sausalito-Marín City Sanitation District.** Sewage collection and treatment for the City of Sausalito and Marin City.

**Tamalpais Community Services District.** Sewage collection for the Tamalpais Valley unincorporated area.

**Tiburon Sanitary District.** Sewage collection and treatment for the Tiburon peninsula and the City of Belvedere.

**Tomales Village Community Service District.** Wastewater collection and treatment for the Tomales unincorporated area.

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses wastewater management in the following policies:

#### **Built Environment Element – Community Development policies**

- Policy CD-1.2: Direct Urban Services. Discourage extension of urban levels of service to serve new development beyond urban service areas.
- Policy CD-5.1: Assign Financial Responsibility for Growth. Require new development to pay its fair share of the cost of public facilities, services, and infrastructure, including but not limited to transportation, incremental water supply, sewer and wastewater treatment, solid waste, flood control and drainage, schools, fire and police protection, and parks and recreation. Allow for individual affordable housing projects to be exempted from the full cost of impact fees, subject to meeting specified criteria.
- Policy CD-5.2: Correlate Development and Infrastructure. For health, safety, and general welfare, new development should occur only when adequate infrastructure is available, consistent with the following findings: ...
  - e. Wastewater, water (including for adequate fire flows), and other infrastructure improvements will be available to serve new development by the time the development is constructed.

#### **Built Environment Element – Public Facilities and Services policies**

- Policy PFS-1.1: Require Cost-Sharing. Require new development to pay for the infrastructure it requires and the public services it receives.
- Policy PFS-1.2: Plan Effectively to Minimize Costs. Plan public facilities in cooperation with service providers to minimize short- and long-term construction, operation, and maintenance costs.
- Policy PFS-1.3: Discourage Privatization and Commercialization. Encourage public ownership of utilities and public service facilities by not authorizing privatization of water, sewer, law enforcement, emergency service, school, and other essential services. Consider prohibiting corporate sponsorship and commercially driven naming rights of public facilities and lands as a means to fund maintenance and improvements.
- Policy PFS-1.4: Reduce Demand on Public Facilities. Reduce per capita and total demand for water and wastewater treatment, and enhance storm water management through integrated and cost-effective design, technology, and demand reduction standards for new development and redevelopment.
- Policy PFS-3.1: Reduce Toxics in Wastewater. Minimize the potential for pollution to water and other resources from sewage treatment.
- Policy PFS-3.2: Promote Alternative Wastewater Systems. Enhance water quality through use of alternative wastewater treatment methods.

**Marin County Code.** County Code chapter 18.07.100 (Operating permits) discusses alternative sewage disposal systems and permitting requirements.

**Marin County Community Development Agency, Building and Safety Division.** Prior to issuance of a Building Permit, the Building and Safety Division requires project applicants to provide a letter from the appropriate sanitary district regarding availability of sewer service, including district certification that a legal connection is available. If a septic system is proposed, then a septic tank permit must be provided from the Environmental Health Division.

### **19.2.3 Storm Drainage**

Storm drainage *infrastructure* is the topic covered in this EIR chapter and not stormwater *quality* and *flooding*. The Regulatory Setting relevant to stormwater quality and flooding is included in chapter 12 (Hydrology and Water Quality) of this EIR.

#### **19.2.3.1 Local**

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses storm water management in the following policies:

#### **Built Environment Element – Community Development policies**

- Policy CD-5.1: Assign Financial Responsibility for Growth. Require new development to pay its fair share of the cost of public facilities, services, and infrastructure, including but not limited to transportation, incremental water supply, sewer and wastewater treatment, solid waste, flood control and drainage, schools, fire and police protection, and parks and recreation. Allow for individual affordable housing projects to be exempted from the full cost of impact fees, subject to meeting specified criteria.

#### **Built Environment Element – Public Facilities and Services policies**

- Policy PFS-1.1: Require Cost-Sharing. Require new development to pay for the infrastructure it requires and the public services it receives.
- Policy PFS-1.2: Plan Effectively to Minimize Costs. Plan public facilities in cooperation with service providers to minimize short- and long-term construction, operation, and maintenance costs.
- Policy PFS-1.3: Discourage Privatization and Commercialization. Encourage public ownership of utilities and public service facilities by not authorizing privatization of water, sewer, law enforcement, emergency service, school, and other essential services. Consider prohibiting corporate sponsorship and commercially driven naming rights of public facilities and lands as a means to fund maintenance and improvements.
- Policy PFS-1.4: Reduce Demand on Public Facilities. Reduce per capita and total demand for water and wastewater treatment, and enhance storm water management through integrated and cost-effective design, technology, and demand reduction standards for new development and redevelopment.



## 19.2.4 Solid Waste Disposal and Recycling

### 19.2.4.1 Federal

**RCRA, CWA, and Code of Federal Regulations.** Title 40 of the Code of Federal Regulations (CFR), Part 258 (Criteria for Municipal Solid Waste Landfills) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria related to location, operation, design, groundwater monitoring, and closure of landfills. The federal regulations establish minimum national criteria under the Resource Conservation and Recovery Act (RCRA) for all municipal solid waste landfill (MSWLF) units and under the Clean Water Act for municipal solid waste landfills that are used to dispose of sewage sludge.

### 19.2.4.2 State

**California Department of Resources Recycling and Recovery (CalRecycle).** CalRecycle oversees, manages, and monitors waste generated in California. It provides limited grants and loans to help California cities, counties, businesses, and organizations meet the State waste reduction, reuse, and recycling goals. It also provides funds to clean up solid waste disposal sites and co-disposal sites, including facilities that accept hazardous waste substances and non-hazardous waste. CalRecycle develops, manages, and enforces waste disposal and recycling regulations, including AB 939, SB 1016, and AB 341.

**Assembly Bill 939.** Assembly Bill 939 (AB 939) (Public Resources Code 41780, 41780.01) requires cities and counties to prepare integrated waste management plans (IWMPs) and to divert 50 percent of solid waste from landfills beginning in calendar year 2000, and 75 percent of solid waste by the year 2020, and each year thereafter. AB 939 also requires cities and counties to prepare Source Reduction and Recycling Elements (SRRE) as part of the IWMP. These elements are designed to develop recycling services to achieve diversion goals, stimulate local recycling in manufacturing, and stimulate the purchase of recycled products.

**Senate Bill 1016.** Senate Bill (SB) 1016 requires that the 50 percent solid waste diversion requirement established by AB 939 be expressed in pounds per person per day. SB 1016 changed the CalRecycle review process for each municipality's IWMP. The CalRecycle Board reviews a jurisdiction's per person disposal rate compliance in accordance with a specified schedule. Beginning January 1, 2018, the Board required review of a jurisdiction's source reduction and recycling element and hazardous waste element every two years.

**Assembly Bill 341.** Assembly Bill 341 (AB 341) sets forth the requirements for the State of California's mandatory commercial recycling program. AB 341 requires a business that generates four cubic yards or more of commercial solid waste per week or is a multi-family residential dwelling of five units or more, to arrange for recycling services. Local governments are required to implement a commercial solid waste recycling program that consists of education, outreach, and monitoring of businesses, and requires that these jurisdictions report the progress achieved in implementing its commercial recycling program to CalRecycle.

**Short-Lived Climate Pollutant Reduction Strategy.** The California Air Resources Board prepared and approved the Short-Lived Climate Pollutant Reduction Strategy (SLCP Strategy) as an integral part of the 2017 Climate Change Scoping Plan to reduce emissions of methane, hydrofluorocarbon gases, and anthropogenic black carbon by 2030 throughout a variety of economic sectors in the state. As required by State Senate Bill 1383 (2016), the SLCP Strategy

requires a reduction in landfill organic waste disposal of 50 percent below 2014 levels by 2020 and 75 percent by 2025. (See chapter 10, Greenhouse Gas Emissions and Energy, of this EIR for more discussion of the 2017 Climate Change Scoping Plan.)

#### **19.2.4.3 Local**

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses solid waste in the following policies:

##### **Built Environment Element – Community Development policies**

- Policy CD-5.1: Assign Financial Responsibility for Growth. Require new development to pay its fair share of the cost of public facilities, services, and infrastructure, including but not limited to transportation, incremental water supply, sewer and wastewater treatment, solid waste, flood control and drainage, schools, fire and police protection, and parks and recreation. Allow for individual affordable housing projects to be exempted from the full cost of impact fees, subject to meeting specified criteria.

##### **Built Environment Element – Public Facilities and Services policies**

- Policy PFS-4.1: Reduce the Solid Waste Stream. Promote the highest and best use of discarded materials through redesign, reuse, composting, and shared producer responsibility. Emphasize a closed-loop system of production and consumption.
- Policy PFS-4.2: Protect Environmental Health. Require the use of waste processing and disposal techniques that prevent the contamination or other impairment of natural resources.
- Policy PFS-4.3: Plan for Waste Transformation or Disposal. Plan for the transformation or elimination of waste materials that cannot be reduced, recycled, or composted.
- Policy PFS-4.4: Promote Regulatory Efforts. Support State legislative or regulatory efforts that will aid in achieving zero waste.

**Marin County Code.** County Code chapter 19.04 (Building Regulations), Subchapter 2 (Green Building Requirements) includes provisions for requiring the reduction of waste generated by construction projects. Chapter 22.20.100 (Solid Waste/Recyclable Materials Storage) provides for the construction and maintenance of storage areas for solid waste and recyclable materials to comply with State law.

#### **19.2.5 Other Utilities (Electrical, Natural Gas, Telecommunications)**

##### **19.2.5.1 Federal**

**Federal Communications Commission (FCC).** The Federal Communications Act gave the FCC the authority to preempt local regulations prohibiting or discriminating against building or expanding telecommunications facilities. Under FCC regulations local jurisdictions cannot deny a proposed telecommunications facility or require modifications based solely upon potential adverse health effects from exposure to electromagnetic field (EMF) emissions when the facility complies with the federal standard for permissible human exposure to EMF.

### 19.2.5.2 State

**California Public Utilities Commission.** The California Public Utilities Commission (CPUC) serves the public interest by protecting consumers and ensuring the provision of safe, reliable utility service and infrastructure at just and reasonable rates, with a commitment to environmental enhancement and a healthy California economy. CPUC regulates utility services (i.e., investor-owned electric and natural gas utilities operating in California), and oversees a economy. In addition, CPUC administers Renewables Portfolio Standard rules for California's retail sellers of electricity (including publicly owned utilities, investor-owned utilities, electric service providers, and community choice aggregators).

Senate Bill 350 (Clean Energy & Pollution Reduction Act) and Senate Bill 100. SB 350 was signed into Law in September 2015 and establishes tiered increases to the Renewables Portfolio Standard (RPS). The Bill requires 40 percent of the state's energy supply to come from renewable sources by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures. The State's RPS program was further strengthened by the passage of SB 100 in 2018. SB 100 revised the State's RPS Program to require retail sellers of electricity to serve 50 percent and 60 percent of the total kilowatt-hours sold to retail end-use customers be served by renewable energy sources by 2026 and 2030, respectively, and requires 100 percent of all electricity supplied come from zero-carbon sources by 2045.

### 19.2.5.3 Local

**Marin Countywide Plan.** The 2007 Marin Countywide Plan (CWP) addresses other utilities in the following policies:

#### **Built Environment Element – Public Facilities and Services policies**

- Policy PFS-5.1: Implement the Telecommunications Facilities Policy Plan. Require new telecommunication projects to be in accordance with the County Telecommunications Facilities Policy Plan.
- Policy PFS-5.2: Consolidate Telecommunications Facilities. Ensure that telecommunications site users share and consolidate to the greatest extent possible all needed facilities, including buildings, access roads, parking areas, utilities, transmitters, towers, and antennas.

**Marin County Code.** County Code chapter 24.04.840 (Underground utilities) describes the County standards for undergrounding utilities.

## 19.3 IMPACTS AND MITIGATION MEASURES

This section describes potential impacts related to utilities and service systems that could result from the Project, and discusses components of the Project that would avoid or reduce those potential impacts. The section also recommends mitigation as needed to reduce potentially significant impacts to less-than-significant levels.

### 19.3.1 Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to utilities and service systems if it would:

- A. Require or result in the relocation or construction of new or expanded water, wastewater or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- B. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;
- C. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- C. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; or
- E. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

### 19.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

This Section contains the proposed revised and new policies and implementing programs from the Safety Element Update that would avoid or reduce significant utilities and service systems impacts. The Housing Element Update does not contain policies or implementing programs that specifically address these impacts.

**Note for reader:** New Safety Element policy and program language is shown in underline while deleted language is shown with ~~strike through~~.

Policy EHS-6.2 Increase Infrastructure, Building, and Services Resilience. Increase the resilience of Marin County infrastructure, buildings, and services with an initial focus on nature-based solutions.

Policy EHS-6.5 Adapt Water Supply. Prepare for a reduced, long-term water supply resulting from more frequent and/or severe drought events.

Program EHS-6.1.c Integrate Adaptation in Plan Documents. Integrate climate adaptation into other plans, ordinances, and programs that dictate land use decisions in the community, such as the Countywide Plan, the Marin County Climate Action Plan, County Local Coastal Program, Marin County Multijurisdictional Local Hazard Mitigation Plan, community and area plans, and the Marin County Development Code.

Program EHS-6.1.d Implement Climate Action Plan. Implement the adaptation measures as contained in the Marin County Climate Action Plan necessary to increase unincorporated communities' resiliency.

Program EHS-6.1.h Use Environmentally Sensitive Adaptation Strategies. Where feasible the County should encourage the use of existing natural features and ecosystem processes, or the restoration thereof, in adaptation projects and measures. This includes systems and practices that use or mimic natural processes, such as permeable pavements, bioswales, and other engineered systems, such as levees that are combined with restored natural systems, to provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife. Proposals addressing adaptation must analyze

the feasibility of natural features and ecosystem process before proposing alternative measures.

Program EHS-6.2.c Broaden Communication Service and Minimize Communication Service Interruptions. Prepare an analysis of gaps in communication services within the County and identify measures for broadening coverage, especially where communication facilities are needed to provide essential services. The analysis should include recommendations for new facilities locations, whether facilities can serve multiple functions, prioritization of facility locations that considers both the communication services and the environmental impacts and administrative burdens of such facilities. (Also see Implementing Program EHS-1.1b under Goal EHS-1).

Program EHS-6.3.h Partner to Protect Key Infrastructure Owned and Operated by Others. The County is dependent on key infrastructure such as water supply systems, waste water treatment systems, roads and bridges, electricity grid, and telecommunications that are owned and maintained by numerous agencies and private companies. Marin County should develop a systematic approach to collaborating and working cooperatively with these entities to ensure the long-term, continued functioning of key infrastructure within Marin County.

Program EHS-6.3.k Study Impacts of Rising Groundwater Levels from Sea Level Rise. Conduct studies on the effects of rising groundwater on the community and the built environment including the potential transport of toxic or hazardous chemicals in the soil at contamination sites and the effects on septic systems. In areas where rising groundwater levels could adversely impact the functioning of existing or future septic systems, the County will undertake a study to identify the hazards and identify solutions.

Program EHS-6.4.a Develop Resilience Hubs. Work with vulnerable populations to develop and implement a plan that identifies priority resilience hub locations and outlines necessary steps to build hubs that serve multiple purposes, including community centers in non-emergency and emergency situations, operations and aide distribution centers in emergencies, and recovery centers post emergencies. The plan should include siting criteria that prioritizes serving the needs of vulnerable populations and using that criteria to identify potential sites in the county. For each priority site, the plan should identify potential hub functions, needed improvements to existing facilities, development and operation costs (including any avoided costs as a result of building the hubs), feasibility of installing microgrids to sustain power in emergencies, and potential funding and financing mechanisms.

Program EHS-6.5.a Plan for Drought. Prepare for a reduced, long-term water supply resulting from more frequent and severe drought events, including working with regional water providers to implement extensive water conservation measures and ensure sustainable water supplies including increasing recycled water infrastructure and capacity.

Program EHS-6.5.b Partner with Water Providers to Improve Water Storage and Efficiency. Improve water storage and efficiency by partnering with the following water managers: water agencies and irrigation districts to explore ways to improve and increase storage capacity and generation efficiency; utility providers to upgrade water systems to accommodate projected changes in water quality and availability; and local water providers in the county to increase participation in water conservation programs to reduce water use throughout Marin County.

### 19.3.3 Impacts and Mitigation Measures

The following analysis is provided at a programmatic level consistent with the level of detail of the proposed Project.

**Impact 19-1a: Project and Cumulative Need for Water System Infrastructure: West Marin Community Service Districts and North Marin Water District - West Marin.** [Threshold of Significance (a)] Parts of the unincorporated County in West Marin are served by small community service districts and North Marin Water District. These districts are in need of infrastructure and facility upgrades and expansion in order to provide water to support development, the construction or relocation of which could cause significant environmental effects.

Under the proposed Project scenario and cumulatively (the Project and the Districts' commitments outside of the Project), Inverness Public Utility District and the North Marin Water District – West Marin facilities will require upgrades and expansion as described in Section 19.1.1 for increased storage, treatment, and conveyance.

Under the Project scenario, no housing units are proposed within the Bolinas Community Public Utility District (BCPUD). If the Project continues to exclude housing units within BCPUD, there will be no project impact for BCPUD. However, sites within BCPUD are included in the Candidate Housing Sites list which could be drawn into the Project. The Candidate Housing Sites list includes two parcels, an existing park and a vacant parcel, over which sixty-three units are proposed. BCPUD will require upgrades and expansion as described in Section 19.1.1 for increased storage, treatment and/or conveyance. A third parcel is included in the list which proposes twelve units in a developed, commercial property. There is potential for existing infrastructure to support conversion of the commercial property to twelve residences. The exact number of residences would have to be verified in coordination with BCPUD.

The following policies and programs listed in Section 19.3.2, such as Policy EHS-6.5 Adapt Water Supply, Program EHS-6.3.h Partner to Project Key Infrastructure Owned and Operated by Others, Program EHS-6.5.a Plan for Drought, and Program EHS-6.5.b Partner with Water Providers to Improve Water Storage and Efficiency, can help to reduce potential environmental impacts and increase the number of units able to be served by existing infrastructure.

In various combinations within each district's service area, upgrade and expansion of infrastructure and facilities will require community coordination; the formation of funding districts; funding; investigation; planning and design; confirming conformance with County, State and Federal regulations; and construction. While there are potential environmental impacts that would be associated with each individual infrastructure and facility improvement project, compliance with District, County, State and Federal regulations; adopted standards for development and construction of water system infrastructure and facilities; and the policies and programs listed above, would ensure that the project and cumulative impacts are ***less than significant***.

**Impact 19-1b: Project and Cumulative Need for Water System Infrastructure: Marin Municipal Water District and North Marin Water District – Novato Service Area.** [Threshold of Significance (a)] Parts of the unincorporated County are served by larger water districts which are in need of infrastructure upgrades and expansion in order to provide water to new development.

Under the proposed Project scenario and cumulatively (the Project and the Districts' commitments outside of the Project), Marin Municipal Water District and North Marin Water District's Novato service areas will need facility and expansion upgrades as described in Sections 19.1.1 for increased storage, treatment, and conveyance.

In various combinations within each district's service area, upgrade and expansion of infrastructure and facilities will require community coordination; annexation; funding; investigation; planning and design; confirming conformance with County, State and Federal regulations; and construction.

While there are potential environmental impacts that may be associated with infrastructure and facility improvement projects either individually, cumulatively, or in parallel with development projects in jurisdictions outside of unincorporated Marin County, compliance with District, County, State and federal regulations and adopted standards for development and construction of water system infrastructure and facilities would ensure that potential impacts are ***less than significant***.

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**Impact 19-1c: Project and Cumulative Need for Water System Infrastructure: Individual Water Supply Systems.** [Threshold of Significance (a)] Parts of the unincorporated County are outside of community service district and water district service areas, and developed parcels need to rely on private, individual water supply systems with water obtained from wells or streams.

While there are potential environmental impacts that may be associated with individual water system projects either for the Project or cumulatively (Project and County's commitments outside of the Project), compliance with District, County, State and federal regulations and adopted standards for development and construction of water system infrastructure and facilities would ensure that potential impacts are ***less than significant***.

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**Impact 19-1d: Project and Cumulative Need for Wastewater System Infrastructure: West Marin Community Service Districts.** [Threshold of Significance (a)] Parts of the unincorporated County are served by community service districts that are in need of infrastructure upgrades and expansion in order to collect and treat wastewater from new development.

Under both the proposed Project scenario and cumulatively (Project and Districts' commitments outside of the Project), Tomales Village Community Public Utility District will require facilities upgrades and expansion as described in Section 19.1.2 for increased treatment and conveyance.

Under the proposed Project scenario, no housing units are proposed within the Bolinas Community Public Utility District. However, cumulatively, with the number of units identified in the Candidate Housing Sites list, Bolinas Community Public Utility District will require upgrades and expansion as described in subsection 19.1.2 for increased treatment and conveyance.

In various combinations within each district's service area, upgrade and expansion of infrastructure and facilities will require community coordination, the formation of funding districts; funding; investigation; planning and design; confirming conformance with County, State and federal regulations; and construction.

While there are potential environmental impacts that may be associated with individual infrastructure and facility improvement projects either for the Project or cumulatively (Project and Districts' commitments outside of the Project), compliance with District, County, State, and federal regulations and adopted standards for development and construction of sanitary sewer system infrastructure and facilities would ensure that potential impacts are ***less than significant***.

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**Impact 19-1e: Project and Cumulative Need for Wastewater System Infrastructure: Sanitary Districts.** [Threshold of Significance (a)] Parts of the unincorporated County are served by sanitary districts that are in need of infrastructure upgrades and expansion in order to collect and treat wastewater from new development.

While there are potential environmental impacts that may be associated with the infrastructure and facility improvement projects either for the Project or cumulatively (Project and Districts' commitments outside of the Project), compliance with District, County, State, and federal regulations and adopted standards for development and construction of sanitary sewer system infrastructure and facilities would ensure that potential impacts are ***less than significant***.

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**Impact 19-1f: Project and Cumulative Need for Wastewater System Infrastructure: Individual Septic Systems.** [Threshold of Significance (a)] Parts of the unincorporated County are outside of sanitary district service areas and need to rely on individual septic systems to treat wastewater on developed parcels.

While there are potential environmental impacts that may be associated with septic system projects either for the Project or cumulatively (Project and County's commitments outside of the Project), compliance with District, County, State, and federal regulations and standards for development and construction of septic systems would ensure that potential impacts are ***less than significant***.

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**Impact 19-1g: Project and Cumulative Need for Storm Water Drainage Infrastructure.**

[Threshold of Significance (a)] Under the proposed Project scenario and cumulatively (Project and County's commitments outside of the Project), new storm water drainage infrastructure will be required as described in Section 19.1.2 for conveyance of storm water runoff.



While there are potential environmental impacts that may be associated with storm drainage infrastructure projects either for the Project or cumulatively (Project and County's commitments outside of the Project), compliance with District, County, State and federal regulations and standards for development and construction of storm water drainage infrastructure would ensure that potential impacts are ***less than significant***.

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**Construction Impacts—Water System, Wastewater System, and Storm Water Drainage Infrastructure**

Construction period effects associated with potential new or upgraded water system, wastewater treatment system, and storm water drainage infrastructure would include those related to air emissions, dust, water quality, and noise, ground disturbance and storm water runoff from construction sites, and traffic interruption. These impacts would be temporary and would be reduced in significance through mandatory, uniformly applied Marin County construction standards and regulations and by mitigation measures identified elsewhere in this EIR. For example, see EIR Chapter 6 (Air Quality) for construction period dust control and air emissions reduction measures; Chapter 7 (Biological Resources) for measures related to ground-disturbance impacts on special-status species and potential tree removal; Chapter 8 (Cultural, Tribal Cultural, and Historical Resources) for impacts and measures related to potentially historic structures and/or cultural and tribal cultural resources; Chapter 9 (Geology and Soils) for erosion control measures and building code design standards; Chapter 10 (Greenhouse Gas Emissions and Energy) for GHG- and energy-reducing measures applicable to construction equipment use; Chapter 11 (Hazards and Hazardous Materials) for potential construction-period hazardous materials use and transport and for potential hazardous waste sites; Chapter 12 (Hydrology and Water Quality) for construction-period storm water runoff provisions; and Chapter 15 (Noise) for construction-period noise control. No additional significant environmental impacts would be anticipated due to construction of water system, wastewater system, and storm water drainage infrastructure beyond the impacts already identified elsewhere in this EIR.

Implementation of the uniformly applied Marin County construction standards and regulations and the mitigation measures identified elsewhere in this EIR would ensure that water system, wastewater system, and storm water drainage infrastructure improvement construction period impacts would be ***less than significant***.

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**Impact 19-2a: Project and Cumulative Water Supply Impacts: West Marin Community Service Districts and North Marin Water District - West Marin.** [Threshold of Significance (b)] Parts of the unincorporated County are served by community service districts and water districts whose supplies are dependent upon water obtained from local wells and streams. Under drought conditions, water in the wells and streams has decreased to levels such that the districts have imposed restrictions for existing customers and moratoriums on new connections. Multiple new connections can result in demands in excess of available supply. Bolinas Community Public Utility District and Inverness Public Utility District do not have sufficient water supplies available to serve the Project or cumulative (Project and Districts' commitments outside of the Project) scenarios during normal, dry and multiple dry years. This represents a *potentially significant impact*.

Minor amounts of development and redevelopment can be feasible when water supply is limited but still in sufficient quantity that life and safety can be supported. Additional housing units can be added within already developed parcels, such as by converting commercial property to mixed-use or multi-family housing, or by providing an Accessory Dwelling Unit (ADU) within a single-family residential parcel. This minor increase in housing units is feasible when it can be demonstrated that:

- (a) the demand for water from the proposed combination of units on the parcel meets or is less than the water usage anticipated by the District for the existing development; and
- (b) the total number of units on the parcel can be provided a quantity of water which sustains life and safety.

Development and redevelopment can also occur when active meter connections are removed from existing parcels and transferred to vacant parcels. This typically happens when an existing, developed parcel has become uninhabitable (e.g., due to bluff erosion), and the residence is moved to a different location.

Proponents of development and redevelopment projects submit applications to the Districts for review to confirm demands can be accommodated from the District's supply. If not already in place, the Districts may have to create a review process and list of requirements which need to be met for development and redevelopment to occur while moratoriums are in effect in order to modify the number and type of units served by an existing service.

However, the minor redevelopment described above cannot achieve the needs of the Housing Element in the Project or cumulative scenarios for Inverness Public Utility District. In the Project scenario, twenty-seven units are proposed across eight parcels already developed with single family residences. Seven of the parcels would increase by one residential unit. The eighth parcel would increase by twelve residential units. As described in Section 19.1.1, Inverness Public Utility District currently has a moratorium on new development, is over design capacity, and has restrictions in effect due to water supply shortages. It is anticipated that single family residential parcels expanded to include ADUs will not be able to share water in the usage amount anticipated by the District and sustain life and safety. Likewise, thirteen residential units would not be able meet or use less water than that provided by one single family residential service connection.

Within the Candidate Housing Sites list, alternative sites are provided for potential development. For the reasons described in the previous paragraph, it is unlikely that Bolinas Community Public Utility District and Inverness Public Utility District will have sufficient water supplies available to serve the vacant parcels within which multiple units are proposed nor the single-family residential parcels proposed to increase by two or more residential units. Commercial properties within the Candidate Housing Sites list may have sufficient water supply available to support conversion to residential use. The exact number of units the parcel could support would need to be coordinated on a case-by-case basis with the corresponding District. Some commercial properties in the Candidate Housing Sites list have limited water usage permits due to septic treatment issues which can also limit the number of units a site may support.

A measure to obtain water to serve the Project and future development could include facilitating and assisting efforts by the Districts to construct pipelines to import water from water districts or water purveyors which have water supply to share. This would require a number of miles of pipeline, and the nearest water districts and purveyors are also experiencing water shortages to the level that new development is restricted. Because of the current drought and planning and costs that would be involved, this measure is considered infeasible to accommodate the proposed Housing Element in the Project or cumulative (Project and Districts' commitments outside of the Project) scenarios.

Another potential measure could include facilitating and assisting efforts by the Districts to install additional wells or construct new water diversions from nearby streams to supplement existing supply. However, water in local wells and streams is diminishing as drought conditions continue. It is uncertain whether new wells and diversions would provide sufficient water to serve the Project. Additionally, new wells and water diversions and the infrastructure required to integrate the related conveyance and storage capacity into the Districts' systems are unlikely to be constructed within the timeframe of the proposed Housing Element Update.

Through implementation of the policies and programs listed in Section 19.3.2, the County and the Districts may find strategies to allocate water to serve the Project, in part, and cumulative scenarios, in part, during normal, dry and multiple dry years. These policies and programs include Policy EHS-6.5 Adapt Water Supply, Program EHS-6.3.h Partner to Project Key Infrastructure Owned and Operated by Others, Program EHS-6.5.a Plan for Drought, and Program EHS-6.5.b Partner with Water Providers to Improve Water Storage and Efficiency. However, these measures can only support the Districts in developing processes and strategies for a lesser number of units than the number proposed within the Project and Candidate Housing Sites list.

For the Project scenario, which includes development of nineteen new units in Inverness as described above, there is currently not sufficient water supply available during normal, dry, and multiple dry years to support the proposed number of residential units. Within the Candidate Housing Sites list, some of the sites may be able to be converted to housing but there is currently not sufficient water supply available during normal, dry, and multiple dry years to support the number of residential units proposed per parcel in Bolinas and Inverness. Because of the effects the current drought on local and regional water sources and the planning and costs involved to find and connect to other sources of water, there are no feasible mitigation measures to reduce potential impacts associated with the Project or cumulative scenarios within the planning period of the proposed Project; therefore, this impact is **significant and unavoidable** with no feasible mitigation.

**Impact 19-2b: Project and Cumulative Water Supply Impacts: North Marin Water District and Marin Municipal Water District.** [Threshold of Significance (b)] Parts of the unincorporated County are served by North Marin Water District (NMWD), the majority of whose supplies are dependent upon water purchased from Sonoma County Water Agency and piped into the County. Other parts of the unincorporated County are served by Marin Municipal Water District (MMWD), the majority of whose supplies are dependent upon water stored in Marin County reservoirs. When these Districts have access to full annual water entitlements and full reservoir capacity, they are able to accommodate population growth as indicated in their “2020 Urban Water Management Plan for North Marin Water District” and “MMWD Water Resources Plan 2040.”

However, due to drought impacts in Sonoma County, NMWD is not able to receive its full annual entitlement from Sonoma County Water Agency and has adopted an ordinance imposing moratoriums on new connections in order to work within its restricted supply. Additionally, until recently MMWD had imposed restrictions on connections for irrigation for new development due to water shortages in its reservoirs as a result of multiple years of less than average rainfall. MMWD’s restriction on irrigation connections was lifted in 2022 because large storm events in the winter of 2021-2022 filled the reservoirs.

Because there is uncertainty in the future about the amount of water that would be available for the Districts to supply to customers during the current, ongoing drought, and the Districts are in the early stages of seeking alternate water sources, possible multiple new connections proposed in the Project and cumulative (Project and Districts’ commitments outside of the Project) scenarios could result in demands in excess of available supply during dry and multiple dry years, which would be a ***potentially significant impact***.

Measures are currently being explored by both Districts to supplement water supplies. Examples of measures which were under consideration for further exploration by MMWD in its Water Resources Plan 2040 include expanding water supply from Sonoma County Water Agency, purchasing water from other sources, desalination, and increased conservation. Measures under consideration for exploration by NMWD in its 2022 Local Water Supply Enhancement Study for the Novato Service Area include improving the Stafford Treatment Plant recapture efficiency and increasing the capacity of and diverting stormwater into Stafford Lake. Because these Districts are not under the authority of Marin County and are currently formulating measures to seek additional water resources, the Project does not propose additional measures to find new sources of water supply.

Measures to reduce demand and assist in maintaining water supplies to serve the Project and future development during normal, dry, and multiple dry years include but are not limited to implementing the following policies and programs listed in Section 19.3.2:

- Policy EHS-6.5 Adapt Water Supply
- Program EHS-6.3.h Partner to Project Key Infrastructure Owned and Operated by Others
- Program EHS-6.5.a Plan for Drought
- Program EHS-6.5.b Partner with Water Providers to Improve Water Storage and Efficiency

- Policy CD-5.1 Assign Financial Responsibility for Growth
- Policy CD-5.2 Correlate Development & Infrastructure
- Policy PFS-1.4 Reduce Demand of Public Facilities

The proposed Housing Element Update contains Program 11: Water Availability which recognizes water availability is a significant constraint to housing development in the County and commits the County to pursue several strategies to mitigate this constraint to the extent feasible, including:

- Beginning in 2023, collaborate with water service providers to conduct a strategic water supply assessment in 2023 to evaluate increased supply within Marin (e.g., increased reservoir capacity, new reservoir(s), increase use of recycled water, desalinization plant) and external to Marin (e.g., EBMUD, Russian River water).
- Upon adoption of the Housing Element, submit it to all water districts and notify all water districts of the requirement to prioritize water allocation for new affordable housing development (Government Code Section 65589.7).

Even with implementation of the above policies and programs, the uncertainty associated with drought impacts on water supply and with the timing and fruition of efforts by the County and water districts to supplement water supplies in dry and multiple dry years presents the possibility that the Districts may not be able to supply water for the Project and cumulative (Project and Districts' commitments outside of the Project) scenarios. Because of these uncertainties, impacts to water supply for the Project and cumulative scenarios are **significant and unavoidable** with no feasible mitigation measures.

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**Impact 19-2c: Project and Cumulative Water Supply Impacts: Individual Water Supply Systems.** [Threshold of Significance (b)] Parts of the unincorporated County are outside of community service and water district service areas, and developed parcels need to rely on private, individual water supply systems with water obtained from wells and local streams. The Project includes sites which will need to rely on individual water systems.

State and local requirements for small water systems will help ensure that the number of units in a development do not exceed the capacity of new or existing wells to supply water. System capacity will be based on the water supply investigations required for individual developments at the time they are proposed.

Under drought conditions, groundwater can decrease to levels below the supply needed to sustain development. This could result in demands in excess of available supply during normal, dry, and multiple dry years, which would be a **potentially significant impact**.

Measures to reduce demand and assist in maintaining water supplies to serve the Project and future development during normal, dry, and multiple dry years include but are not limited to implementing the following policies and programs listed in Section 19.3.2:

- Policy EHS-6.5 Adapt Water Supply
- Program EHS-6.5.a Plan for Drought
- Program EHS-6.5.b Partner with Water Providers to Improve Water Storage and Efficiency
- Policy CD-5.1 Assign Financial Responsibility for Growth
- Policy CD-5.2 Correlate Development & Infrastructure
- Policy PFS-1.4 Reduce Demand of Public Facilities
- Housing Element Program 11 Water Availability

However, due to the uncertainty associated with drought impacts on water supply, water supply impacts resulting from the Project and cumulative (Project and County's commitments outside of the Project) scenarios are **significant and unavoidable** with no feasible mitigation during the planning horizon of the proposed Project.

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**Impact 19-3a: Wastewater Treatment Capacity Impacts: Community Service Districts Providing Sewage Treatment.** [Threshold of Significance (c)] Parts of the unincorporated County are served by small community service districts that are in need of infrastructure upgrades and expansion in order to collect and treat wastewater from new development.

Possible multiple new connections discharging an increased amount of waste to existing infrastructure and facilities could exceed the system's capacity for conveyance and treatment, which would be a **potentially significant impact**.

As described in section 19.1.2 Wastewater, the Bolinas Community Public Utility District has a moratorium on new sewer connections that has been in effect since 1985. Other wastewater treatment service providers such as Sausalito-Marín City Sanitary District completed upgrades to their treatment plant in Fall of 2021 and West Marin is currently planning for system improvements. Table 19-10 Remaining Treatment Capacity After Development shows the districts that would not have capacity to serve the proposed Project without system improvements and upgrades.

With existing system capacity, minor amounts of development and redevelopment are feasible. Additional housing units can be added within already developed parcels, such as by converting commercial property to mixed-use or multi-family housing, or by providing an Accessory Dwelling Unit (ADU) within a single-family residential parcel. This minor increase in housing units can be accomplished when it can be demonstrated that waste discharged from the proposed combination of units on the parcel meets or is less than the waste discharged from the original development.

Development and redevelopment can also occur when development is removed from existing parcels and transferred to vacant parcels. This typically happens when an existing, developed parcel has become uninhabitable (e.g., due to bluff erosion) and the residence is moved to a different location.

However, minor redevelopment described above cannot achieve the needs of the Housing Element in the Project or cumulative (Project and Districts’ commitments outside of the Project) scenarios.

Measures undertaken by the County to maintain or reduce sewage discharges from proposed development or redevelopment and assist in maintaining existing infrastructure and treatment capacity to serve the Project include but are not limited to implementing the following policies and programs listed in Section 19.3.2: Policy PFS-1.4 Reduce Demand of Public Facilities, Policy CD-5.2 Correlate Development & Infrastructure, Policy EHS-6.5 Adapt Water Supply, which can help to reduce discharges to the Districts’ systems, and Program EHS-6.3.h Partner to Protect Key Infrastructure Owned and Operated by Others. Efforts under Program EHS-6.3 could include working with the districts to expand and upgrade their treatment facilities. However, increasing wastewater treatment capacity is considered infeasible within the timeframe of the Housing Element Update in the Project or cumulative scenarios due to a combination of factors. These factors include coordinating community support, funding, executing the associated planning studies and investigations, coordinating with jurisdictional agencies, project design and review, and construction.

Because increasing wastewater treatment capacity is considered infeasible within the timeframe of the Project, wastewater treatment capacity impacts for the Project and cumulative (Project and Districts’ commitments outside of the Project) scenarios would be **significant and unavoidable** with no feasible mitigation during the planning horizon of the proposed Project.

**Impact 19-3b: Wastewater Treatment Capacity Impacts: Sanitary Districts.**  
 [Threshold of Significance (c)] Parts of the unincorporated County are served by large sewer districts, some for which future treatment capacity is unknown and which may need infrastructure upgrades and expansion in order to collect and treat wastewater from the Project.

Possible multiple new connections discharging an increased amount of wastewater to existing infrastructure and facilities could exceed the system’s capacity for conveyance and treatment, which would be a **potentially significant impact**.

Sanitary Districts for which future treatment capacity is unknown include:

**Table 19-23:  
Wastewater Treatment Districts with Unknown Capacity**

District	Project No. Units	Cumulative* No. Units	Candidate Housing Sites with Other City/Town RHNA No. Units**
Sanitary District No. 5	0	43	842
Central Marin Sanitation Agency	1,080	1,232	6,302
Las Gallinas Valley Sanitary District	1,742	4,342	5,630

\* Candidate Housing Sites. Does not include other City and Town RHNA

\*\*Candidate Housing Sites and other City and Town RHNA consistent with Table 19-10 in subsection 19.1.2

Measures to maintain or reduce sewage discharges from proposed development or redevelopment, and assist in maintaining existing infrastructure and treatment capacity to serve the Project would include but not be limited to implementing the following policies and programs listed in Section 19.3.2: Policy PFS-1.4 Reduce Demand of Public Facilities, Policy CD-5.2 Correlate Development & Infrastructure, Policy EHS-6.5 Adapt Water Supply, which can help to reduce discharges to the Districts' systems, and Program EHS-6.3h Partner to Protect Key Infrastructure Owned and Operated by Others. Efforts under Program EHS-6.3h could include working with the Districts to expand and upgrade their treatment facilities. However, increasing wastewater treatment capacity is considered infeasible within the timeframe of the Housing Element Update in the Project and cumulative (Project and Districts' commitments outside of the Project) scenarios due to a combination of factors. These factors include coordinating support, funding, executing the associated planning studies and investigations, coordinating with jurisdictional agencies, project design and review, and construction.

Due to the uncertainties associated with the existing wastewater treatment facilities and their capacities, the impact under the Project and cumulative (Project and Districts' commitments outside of the Project) scenarios would be **significant and unavoidable** with no feasible mitigation during the planning horizon of the proposed Project.

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**Impact 19-3c: Wastewater Treatment Capacity Impacts Outside of Sanitary Districts and Community Service Districts Providing Sewage Treatment.** [Threshold of Significance (c)] Parts of the unincorporated County are outside of sanitary district service areas and community service districts providing wastewater treatment. These areas rely on individual septic systems to treat wastewater on developed parcels. The potential for an individual septic system to have capacity to serve a development's demand depends on the specific soil conditions and existence of natural and built features within the parcel proposed for development.

Until site-specific investigations are completed, uncertainty exists on any given parcel regarding the capacity of the existing soil to treat wastewater from a proposed development. Due to this uncertainty in the ability of the parcel to serve a development's wastewater treatment needs, this would be a **potentially significant impact**.

The suitability of soil to treat wastewater in septic systems can be affected by site slope, composition of the soil, percolation rate, and depth to groundwater. These factors are not known until investigative tests are performed in the field. Investigative tests are typically performed at the onset of planning for a proposed development. In addition to being constrained to locations of suitable soil within a property, the siting of septic systems can also be affected by the height of the groundwater table and the location of groundwater wells, watercourses, waterbodies, ditches, culverts, unstable landforms, domestic waterlines, driveways, swimming pools, and property boundaries. Placing a septic system within areas of suitable soil and accommodating the setbacks to the various site features also affects the configuration of improvements for buildings, access, and utilities, and can limit the number of units constructed within a parcel.



Measures to maintain or reduce sewage discharges from proposed development or redevelopment, and assist in maintaining existing infrastructure and treatment capacity to serve the Project would include but not be limited to implementing the following policies listed in Section 19.3.2: Policy CD-5.1 Assign Financial Responsibility for Growth, Policy CD-5.2 Correlate Development & Infrastructure, Policy PFS-1.4 Reduce Demand of Public Facilities, Policy EHS-6.5 Adapt Water Supply, and Program 12, “Septic for Multi-Unit Housing” identified in Section 5 of the Housing Element Update. The potential measures associated with water conservation to adapt water supply for Policy EHS-6.5 Adapt Water Supply is included because the policy includes provisions to conserve water, which would reduce demands on septic systems. Program 12 can help support septic for multi-unit housing because it proposes to identify alternative approaches to sewage disposal (e.g., package plants, community systems, incinerator toilets) and to develop standards for multi-unit development in areas served by septic systems.

The Safety Element Update contains a new policy addressing impacts of rising groundwater levels on septic systems:

Program EHS-6.3.k Study Impacts of Rising Groundwater Levels from Sea Level Rise. Conduct studies on the effects of rising groundwater on the community and the built environment including the potential transport of toxic or hazardous chemicals in the soil at contamination sites and the effects on septic systems. In areas where rising groundwater levels could adversely impact the functioning of existing or future septic systems, the County will undertake a study to identify the hazards and identify solutions.

An additional measure to support septic systems in the Project and cumulative (Project and County’s commitments outside of the Project) scenarios would be to implement water conservation measures to reduce demands on septic systems.

However, a parcel’s ability to accommodate a proposed development’s septic system is unknown until an investigation is completed. Additionally, the results of investigations to identify alternative approaches to sewage disposal as part of implementing Housing Element Program 12, as well as the results of implementing Safety Element Program EHS-6.3.k, described above, are unknown.

Due to the uncertainty of the ability of a given parcel to accommodate a proposed housing site’s wastewater treatment needs, and the unknowns of the results of investigations to identify alternative approaches to sewage disposal and rising groundwater levels, Project and cumulative (Project and County’s commitments outside of the Project) septic system impacts would be **significant and unavoidable** with no feasible mitigation.

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#### **Impact 19-4: Solid Waste Generation Impacts and Compliance with Solid Waste Statutes and Regulations.** [Thresholds of Significance (d) and (e)]

Solid Waste Generation. Section 19.1.4, Solid Waste Disposal and Recycling, states that Redwood Landfill’s design capacity is currently 26.08 million cubic yards and its estimated closure date is 2036, although increased recycling and resource recovery activities throughout the County may extend the life span of this landfill. The landfill also has a maximum daily disposal capacity of 2,310 tons. In 2021, the landfill received a total of 300,017 tons of waste

from County residents and businesses, based on an estimated population of 260,206 persons.<sup>25</sup>

The RHNA assignment for the County is 3,569 units for the period 2023 to 2031, and the number of units proposed under the Project is 5,214. According to the U.S. Census Bureau, the County has an average unit occupancy of 2.41 persons, so the 5,214 units for the Project would be expected to generate approximately 12,566 new County residents.<sup>26</sup> This represents an increase of 4.8 percent of the existing County population.<sup>27</sup>

The estimated annual non-recyclable waste generated by County residents and businesses is 300,016 tons per year, which equals 822 tons per day (see “Solid Waste Facility Permit, Redwood Landfill” in Section 19.1.4 above). Divided by the 2021 population, each person in the County generates approximately 6.3 pounds per day of solid waste that require disposal.<sup>28</sup> As estimated above, the Project could result in a County-wide population increase of 12,566 persons, or 4.8 percent over the Housing Element Update planning period (2023-2031). It is estimated that these additional residents would generate 39.6 tons per day or 14,454 tons per year<sup>29</sup> of additional solid waste that would need to be disposed of at the local landfill. This additional 39.6 tons of waste represents an increase of 1.7 percent over the current daily disposal rate at the Redwood Landfill, which would not exceed the permitted daily disposal capacity of 2,310 tons as explained below.

Calculated another way, the landfill currently accepts 822 tons of waste per day from County residents and businesses, which is 35.6 percent of the landfill’s daily maximum disposal capacity of 2,310 tons. The additional 39.6 tons per day that could be generated by the expected 12,566 additional residents would increase the County’s contribution of waste to the landfill from 822 to 861.6 tons per day, which represents an increase of 1.7 percent above the landfill’s daily disposal rate, from 35.6 percent to 37.3 percent. At current disposal rates, the landfill has an estimated life of 14 remaining years assuming closure in 2036 according to State records<sup>1</sup>. Therefore, the landfill has adequate capacity for County waste at least through the planning period of the proposed Housing Element Update. Therefore, the Project would not result in the generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

The 2007 Countywide Plan (CWP) addresses solid waste management with several policies in the Community Development (CD) and Public Facilities and Safety (PFS) Elements. Policy CD-5.1 requires new development to pay its fair share of costs associated with public facilities, including solid waste. Policies PFS-4.1 through PFS-4.4 encourage the minimization of wastes from construction and occupancy of new development, preventing environmental contamination by waste management, and eliminating wastes that cannot be reduced, recycled, or composted. In addition, Marin County Code Chapter 19.04 (Building Regulations), Subchapter 2 (Green Building Requirements) requires reducing waste generated by construction projects. The County’s development review process includes CEQA compliance for all new projects, including housing projects to meet the County RHNA, which will address landfill capacity, solid waste management, and waste regulatory compliance at that time. Other than the aforementioned

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<sup>25</sup> SWFP 21-AA-0001, 2022.

<sup>26</sup> 5,214 units X 2.41 persons/unit = 12,566 persons

<sup>27</sup> 12,566 new persons divided by 260,206 total County population = 4.8%

<sup>28</sup> 822 tons X 2,000 pounds/ton = 1,644,000 pounds/day divided by 260,206 persons = 6.3 pounds/person/day.

<sup>29</sup> 12,566 new persons X 6.3 pound/day/person = 79,166 pounds or 39.6 tons/day.

policies in the current CWP, the Project does not include any additional policies regarding solid waste.

Based on the above calculations and the existing CWP policies, the additional solid waste requiring disposal in the local landfill that would result from the Project's anticipated population increase would be well within the daily and permitted disposal capacities of the Redwood Landfill. In addition, the existing CWP, County Code, and the County's development review process will help reduce potential impacts by continuing to encourage source reduction and recycling of additional waste that would otherwise be disposed in the local landfill in the future. Therefore, impacts related to landfill capacity and solid waste generation would be **less than significant**.

Solid Waste Regulations. The County will continue to comply with adopted laws and regulations regarding solid waste minimization and recycling as described in the subsection above on solid waste generation. Therefore, the Project will not interfere with the County's compliance with federal, State, and local management and reduction statutes and regulations related to solid waste. Therefore, potential impacts would be **less than significant**.

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#### **Impact 19-5: Electricity, Natural Gas, and Telecommunications Infrastructure Impacts.** [Threshold of Significance (a)]

Electricity and Natural Gas. PG&E is expected to be able to meet overall demand for electricity and natural gas for all its customers, including Marin County, in the future.<sup>30</sup> PG&E will continue to maintain and upgrade its electrical and natural gas distribution systems as needed based on future demand trends. For electricity, this includes local and regional distribution lines, undergrounding or poles where needed, and transformer stations. For natural gas, this includes local and regional pipelines and transmission stations. Similar to current conditions, PG&E will be required to temporarily restrict electrical supplies to some areas for maintenance and Power Service Interruptions depending on weather and other fire conditions. In addition, County Code Chapter 24.04.840 (Underground Utilities) describes the County standards for undergrounding utilities.

The current RHNA assignment for the County is 3,569 units for the period 2023 to 2031, and the number of units proposed under the Project is 5,214. According to the U.S. Census Bureau, the County has an average unit occupancy of 2.41 persons (USCB 2022), so the 5,214 units for the Project would be expected to generate approximately 12,566 new County residents<sup>31</sup>. This represents an increase of 4.8 percent of the existing County population.<sup>32</sup>

The Project would add 5,214 units or 4.8 percent to the County's current population over the next nine years. There is no evidence that this incremental amount of new infill housing or population growth will require major energy improvements or new facilities. PG&E has anticipated this level of growth in its long-range service planning process. Therefore, neither the Housing Element Update nor the Safety Element Update would require or result in the relocation

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<sup>30</sup> Pacific Gas & Electric Corporation (PG&E), Corporate Website accessed July 2022.  
<https://www.pgecorp.com/corp/index.page>.

<sup>31</sup> 5,214 units X 2.41 persons/unit = 12,566 persons

<sup>32</sup> 12,566 new persons divided by 260,206 total County population = 4.8%

or construction of new or expanded electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Impacts on electricity and natural gas infrastructure that would result from the Project would be ***less than significant***.

Please see Chapter 10, Greenhouse Gas Emissions and Energy, of this EIR for a detailed analysis of current energy consumption and projected energy demand under the proposed Project.

Telecommunications. Under the Project, the need for telecommunication systems will likely grow, given the popularity and necessity of modern personal electronic devices. The facilities and networks for these telecommunication services are presently provided by a number of private firms that will expand as consumer demand continues to grow. In unincorporated areas, these systems require discretionary review and approval by the County.

The current RHNA assignment for the County is 3,569 units for the period 2023 to 2031, and the number of units under the proposed Project is 5,214. According to the U.S. Census Bureau, the County has an average unit occupancy of 2.41 persons (USCB 2022), so the 5,214 units for the Project would be expected to generate approximately 12,566 new County residents<sup>33</sup>. This represents an increase of 4.8 percent of the existing County population<sup>34</sup>.

The Project will add 5,214 units or 4.8 percent to the City's current population over the next nine years. There is no evidence that this incremental amount of new infill housing or population growth will require major telecommunications improvements or new facilities. According to the CPUC, local telecommunication companies have anticipated at least this level of growth in its long-range service planning process.<sup>35</sup> Therefore, neither the Housing Element Update nor the Safety Element Update would require or result in the relocation or construction of new or expanded telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

The County's adopted PFS Element of the 2007 CWP addresses telecommunication utilities in two policies. Policy PFS-5.1 facilitates implementation of the County's Telecommunications Facilities Policy Plan, which was first issued in 1997, and new telecommunication projects must be consistent with the Plan. In addition, Policy PFS-5.2 helps ensure that telecommunications site users share and consolidate all of their facilities to the greatest extent possible (i.e., buildings, access roads, parking areas, utilities, transmitters, towers, and antennas). The County also has policies regarding the installation of 5G networks in the County.

As described in Section 19.2, Regulatory Setting, existing County policy and development regulations require any project to install a new telecommunications facility within the unincorporated areas, including those for new 5G networks, to obtain approval from the County. The 5G requirements are incorporated into the County's Policy regulating "Small Cell Wireless Facilities within public roads" (Resolution 2019-69). New applications must be consistent with the County's "Telecommunications Facilities Policy Plan Application Requirements Checklist." Existing County policy emphasizes the use of stealth design for

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<sup>33</sup>5,214 units X 2.41 persons/unit = 12,566 persons

<sup>34</sup>12,566 new persons divided by 260,206 total County population = 4.8%

<sup>35</sup>California Public Utilities Commission, Communications Division, Internet and Phone Section, website <https://www.cpuc.ca.gov/industries-and-topics/internet-and-phone>

antenna facilities, supports co-location of antennas to minimize visual clutter, and establishes preferences for siting telecommunications facilities in industrial and commercial areas over residential areas. Within the parameters established by the FCC, the County may place limits on the location and design of antenna and equipment that make up the antenna array. In addition, County Code Chapter 24.04.840 (Underground Utilities) describes the County standards for undergrounding utilities.

With implementation of the Countywide Plan and the County's Telecommunications Facilities Policy Plan, the anticipated incremental growth of telecommunication networks, new or modified facilities, and expanded systems in the County can be accommodated through the County's development review process. Therefore, impacts on telecommunications infrastructure resulting from the Project would be ***less than significant***.

### **Construction Period Impacts--Electricity, Natural Gas, and Telecommunications**

**Infrastructure**. Construction period impacts associated with potential electrical, natural gas, and telecommunication improvements would include those related to air emissions and dust, noise, water quality, noise, impacts due to ground disturbance and storm water runoff from construction sites, and traffic interruption. These impacts would be temporary and would be reduced through mandatory, uniformly applied Marin County construction standards and regulations, and by mitigation measures identified elsewhere in this EIR. For example, see EIR Chapter 6 (Air Quality) for construction period dust control and air emissions reduction measures; Chapter 7 (Biological Resources) for ground-disturbance impacts on special status species and potential tree removal; Chapter 8 (Cultural, Tribal Cultural, and Historical Resources) for impacts on potentially historic structures and/or cultural and tribal cultural resources; Chapter 9 (Geology and Soils) for erosion control measures and building code design standards; Chapter 10 (Greenhouse Gas Emissions and Energy) for GHG- and energy-reducing measures applicable to construction equipment; Chapter 11 (Hazards and Hazardous Materials) for potential construction-period hazardous materials use and transport and for potential hazardous waste sites; Chapter 12 (Hydrology and Water Quality) for construction-period storm water runoff provisions; and Chapter 15 (Noise) for construction-period noise control. No additional significant environmental impacts would be anticipated due to construction of electrical system, gas, and telecommunication infrastructure beyond the impacts already identified in this EIR.

Implementation of the uniformly applied Marin County construction standards and regulations and the mitigation measures identified elsewhere in this EIR would ensure that electrical system, natural gas, and telecommunications infrastructure improvement impacts during the construction period would be ***less than significant***.

### **Cumulative Electricity, Natural Gas, and Telecommunications Infrastructure Impacts**

Future cumulative development outside of the Project planning area could result in potential need for electrical, natural gas, and telecommunication improvements, which, depending on the improvement project, would be anticipated to result in construction period effects that include air emissions and dust, noise, water quality, and noise impacts due to ground disturbance and storm water runoff from construction sites, and traffic interruption. These would be temporary and localized, though an improvement project would be subject to the mandatory, uniformly applied Marin County construction standards and regulations, and by mitigation measures discussed above and identified elsewhere in this EIR. Incorporated cities and towns would apply their own standards, which would be anticipated to incorporate similar construction period controls, such as for construction period dust control and air emissions reduction; potential

ground-disturbance impacts on special status species and potential tree removal; impacts on potentially historic structures and/or cultural and tribal cultural resources; erosion control measures and building code design standards; GHG- and energy-reducing measures applicable to construction equipment; potential construction-period hazardous materials use and transport and for potential hazardous waste sites; construction-period storm water runoff provisions; and construction-period noise control. These types of regulations and standards would ensure that any cumulative impacts would be less-than-significant and would ensure that any cumulative impacts would be less-than-significant. Therefore, future potential development facilitated by the Project would not make a cumulatively considerable contribution to any significant cumulative impact with respect to electrical system, gas, and telecommunication infrastructure beyond the impacts already identified in this EIR, and this impact would be ***less than significant***.

### **Cumulative Solid Waste Disposal and Recycling Impacts**

Future cumulative development outside of the Project planning area would result in an increase in solid waste generation; however, recycling and waste reduction measures would also reduce solid waste volume and the corresponding demand for increased landfill capacity. As discussed above in Impact 19-4, the projected additional solid waste due to Project-facilitated development would increase daily disposal at the Redwood Landfill by approximately 1.7 percent. Therefore, future potential development facilitated by the Project would not make a cumulatively considerable contribution to any significant cumulative impact with respect to solid waste disposal and recycling beyond the impacts already identified in this EIR, and this impact would be ***less than significant***.

## 20. WILDFIRE

Environmental Issue Area	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
<b>Wildfire. If located in or near state responsibility areas or lands classified as very high fire hazard, would the project:</b>				
a) <i>Substantially impair an adopted emergency response plan or emergency evacuation plan?</i>			X	
b) <i>Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?</i>			X	
c) <i>Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?</i>			X	
d) <i>Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?</i>			X	
e) <i>Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?</i>			X	
<b>[Note: This threshold has been moved from Chapter 11, Hazards and Hazardous Materials, and included in this Chapter.]</b>				

This chapter describes the environmental setting including the regulatory framework necessary to evaluate potential environmental impacts resulting from the Project, identifies thresholds of significance to determine whether there are potentially significant impacts,<sup>1</sup> describes potential impacts that could result from the Project, and discusses Project goals, policies, and implementing programs that would avoid or reduce those potential impacts.

### 20.1 ENVIRONMENTAL SETTING

#### 20.1.1 Regional Wildfire Setting

A. Wildland Urban Interface and Fire Hazard Severity Zones. The Wildland Urban Interface (WUI) is the transition zone between areas of native vegetation and developed areas. Approximately 60,000 acres – 18 percent of the County’s land area – falls within the wildland

<sup>1</sup>CEQA Guidelines, Appendix G, item XX (a through d) and item IX(g).

urban interface (WUI) where residences (i.e., homes and structures) are adjacent to or intermixed with open space and wildland vegetation.<sup>2</sup> The term “WUI” is not a designation of potential wildfire severity but a defined description of an area where urban development meets undeveloped lands at risk of wildfires. Because of the mix and density of structures with natural fuels in close proximity to each other, combined with more limited access and egress routes, fire management is more complex in WUI environments. In Marin County specifically, many of the access roads within the WUI are narrow and winding and are often on hillsides with overgrown vegetation, making it even more difficult and costly to reduce fire hazards, fight wildfires, and protect homes and lives in these areas. Figure 20-1 shows the WUI areas in Marin County as identified in the Community Wildfire Protection Plan (CWPP).

The California Department of Forestry and Fire Protection (CAL FIRE) is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors.<sup>3</sup> These zones, referred to as Fire Hazard Severity Zones (FHSZ), influence how people construct buildings and protect property to reduce risk associated with wildland fires. The maps were last updated in the mid-1980s and early 1990s. A countywide assessment of the wildland fire threat undertaken by CAL FIRE revealed that nearly 313,000 acres (approximately 82 percent of the total land area of the county) are ranked as having moderate to very high fire hazard severity zone ratings. The FHSZ in the County are shown in Figure 20-2.

**B. Wildfire Responsibility Areas.** Fire protection in California is the responsibility of either the federal, state, or local government. On federally owned land, or federal responsibility areas (FRA), fire protection is provided by the federal government, often in partnership through local grants and contracts.<sup>4</sup> In state responsibility areas (SRA), which are defined according to land ownership, population density, and land use, CAL FIRE has a legal responsibility to provide fire protection. CAL FIRE is not responsible for densely populated areas, incorporated cities, agricultural lands, or federal lands. Local responsibility areas (LRA) include incorporated cities and cultivated agriculture lands. In LRAs, fire protection is provided by city fire departments, fire protection districts, or counties, or by CAL FIRE under contract to local government. Figure 20-3 shows the FRA, SRA, and LRA in Marin County.

In Marin County, CAL FIRE contracts with the Marin County Fire Department (MCFD) to provide wildland fire protection and associated fire prevention activities for the SRA, which comprises more than half of the total land area in the County.<sup>5</sup> Marin is one of six counties in the state that contract with CAL FIRE to protect the SRA. MCFD is responsible for the protection of approximately 200,000 acres of SRA within the county and is the primary agency that handles wildland fires. MCFD also provides similar protection services to approximately 100,000 acres of FRA in the Golden Gate National Recreation Area (GGNRA), Muir Woods National Monument, and Point Reyes National Seashore.

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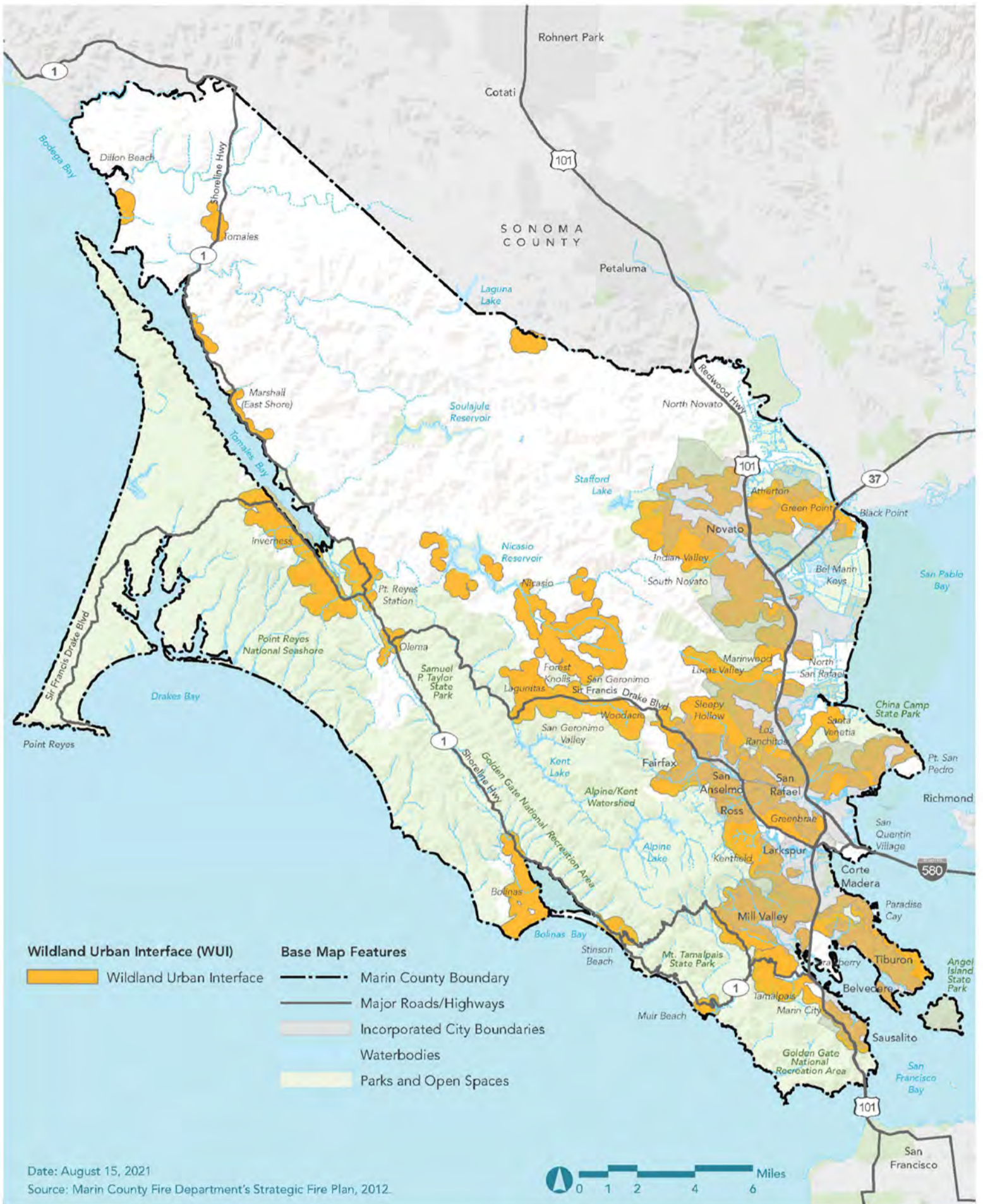
<sup>2</sup>FIRE Safe Marin, Marin County Fire Department, Marin Community Wildfire Protection Plan, December 2020, <https://firesafemarin.org/resources/marin-community-wildfire-protection-plan/>, accessed 7/8/22.

<sup>3</sup>Marin Community Wildfire Protection Plan.

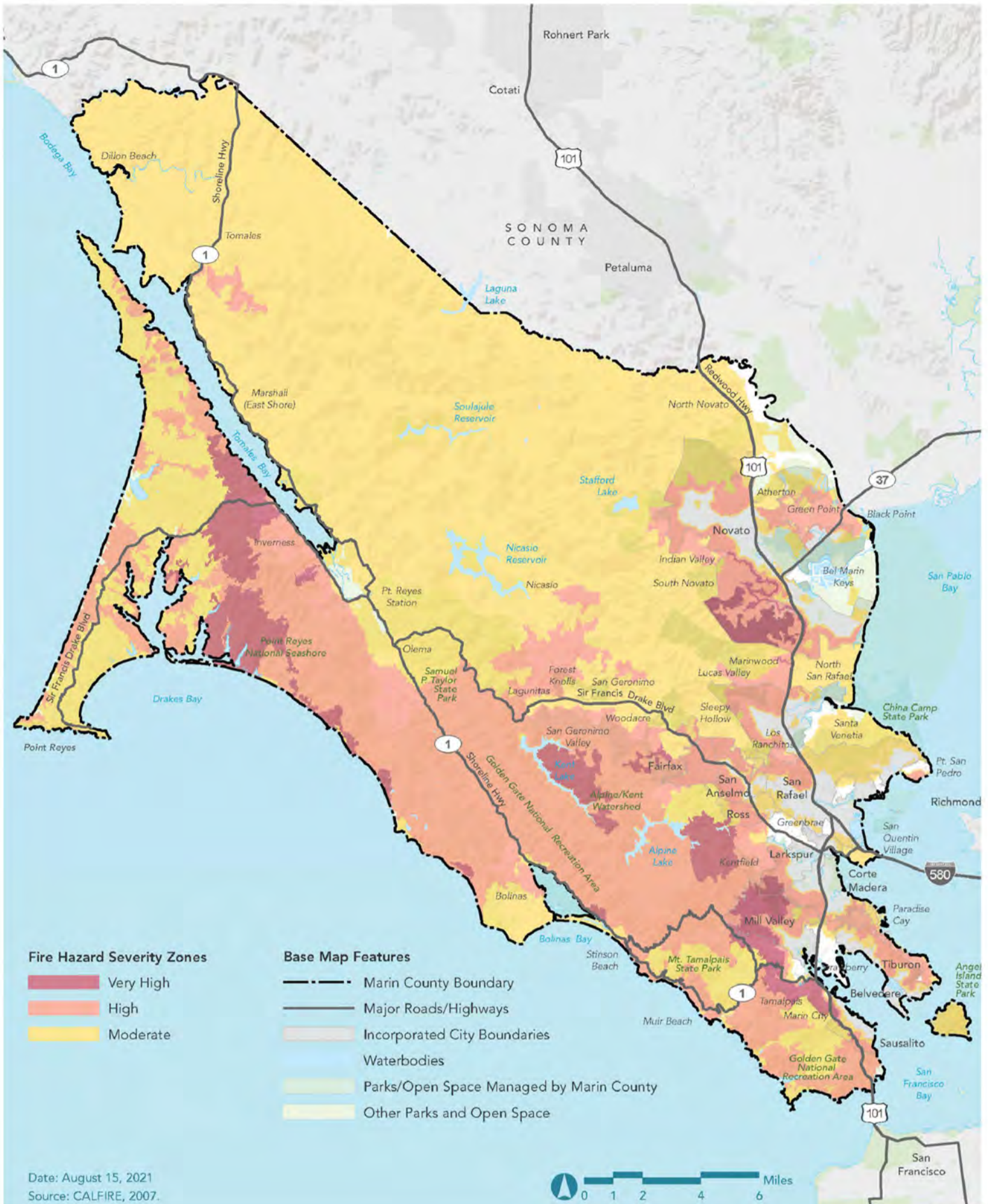
<sup>4</sup>Marin Community Wildfire Protection Plan.

<sup>5</sup>Marin Community Wildfire Protection Plan.

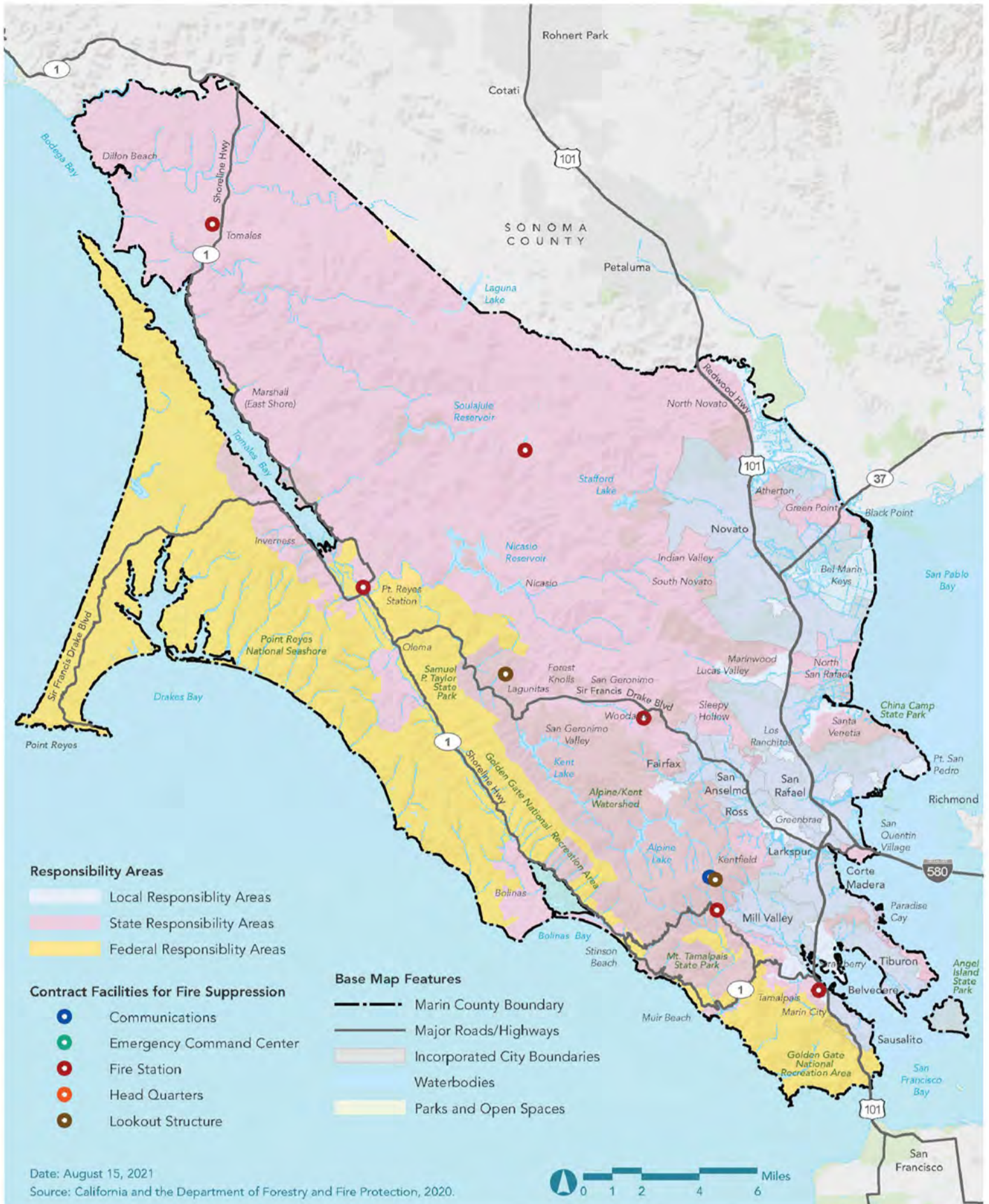




**Figure 20.1- Wildland Urban Interface Area**



**Figure 20.2 - Fire Hazard Severity Zones**



**Figure 20.3 - Wildfire Responsibility Areas**

**C. Wildfire Evacuation Zones.** Fire Safe Marin, Marin County's Fire Safe Council, promotes public and private partnerships to enhance wildfire safety and build Firewise Communities. Fire Safe Marin is a nonprofit organization with the dual mission of reducing wildland fire hazards and improving fire safety awareness in Marin County. Fire Safe Marin and many Marin County fire agencies, cities and towns, and other partners are working together to develop improved wildfire evacuation maps and messaging for residents of Marin's wildland urban interface communities.<sup>6</sup> Fire Safe Marin hosts a website with interactive evacuation route maps. These FireClear maps, funded by fire agencies, cities and towns, and a grant from CAL FIRE, were published as they were completed over the course of 2020. FireClear maps for East Corte Madera, Fairfax, Greenbrae, Inverness, Nicasio, Panoramic, Ross Valley, San Geronimo, and Novato are compiled in EIR Appendix I.

As part of the County's evacuation planning and response efforts, the entire county has been divided into individual evacuation zones.<sup>7</sup> Marin County is using ZoneHaven, a community evacuation interface that allows the public access to real-time status updates and instructions for their evacuation zones and provides County municipalities and fire responders with an evacuation planning application. The County can use ZoneHaven to issue evacuation, shelter in place, and other emergency orders.

### 20.1.2 Countywide Wildfire Risk Setting

**A. Meteorological Conditions.** Weather in Marin County consists of warm, dry summers and cool, wet winters (Marin County Fire Department 2020). The climate in early fall and late spring is generally similar to the summer climate, and late fall is similar to winter. Spring is generally cool, but not as wet as the winter. Winds in the late spring through the fall usher in cool and moist air and can be strong (15 to 25 mph), especially over the ridge tops and through valleys running northwest to southeast, including San Geronimo/Ross, Hicks, and Lucas Valleys. Beginning in late November and lasting through the end of March, winds can reach 30 mph, and travel through the southeast to northwest lying valleys, over low-lying ridges such as the Marin Headlands, and through the Golden Gate. While these general weather conditions are fairly representative of typical Marin County weather, complex topography, annual variability of weather patterns, and less frequent and transient weather patterns are important to fire conditions.

Occasionally in the mid- to late-summer and more often in the fall and early winter, easterly winds compress, become warmer, and lower the relative humidity while drying out vegetation (Marin County Fire Department 2020). As the winds move through canyons, they pick up speed and create strong gusts. These Northern California "Diablo" winds are most common in the late summer through early winter. It is under these wind regimes that California typically experiences its largest and most destructive fires. Under these Diablo wind conditions, temperatures in the county can reach 100°F or higher in the inland areas and 80°F or higher at the coast, and relative humidity can be very low. In addition, wind speeds can be high (20 to 40 mph) and

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<sup>6</sup>Fire Safe Marin, Evacuation Maps, <https://firesafemarin.org/prepare-yourself/evacuation-guide/evacuation-maps/>, accessed 7/8/2022.

<sup>7</sup>County of Marin, Marin's New Approach to Evacuations using ZoneHaven, <https://emergency.marincounty.org/pages/evacuation>, accessed 7/8/2022.

gusty, and are often much higher over the mountains and ridge tops of Marin (such as Mt. Tamalpais, Loma Alta, and Mt. Burdell) than over low-lying areas.

**B. Historic Wildfires in Marin County.** The historical record shows that many large wildfires (greater than 500 acres) have occurred in the County since 1850 (Marin County Fire Department 2020). Many more frequent and smaller fires have occurred throughout the County. Fire records for Marin are incomplete, but historic newspaper articles and old fire planning studies document an active fire history going back to the early 20th century. Throughout its history, Marin County has experienced many wildland fires. Wildland fire is a general term used to describe a non-structure fire that occurs in vegetation and natural fuels. The most recent fire in Marin County was the Woodward Fire, which was started on August 17, 2020 by lightning from a rare dry lightning weather event. The Woodward Fire was contained by October 9, 2020 at 4,929 acres. The last fire in Marin County that resulted in significant structure loss was the Vision Fire in 1995, which destroyed 48 structures in the community of Inverness. In 1929, the base of Mt. Tamalpais – specifically the community of Mill Valley – experienced a significant fire known as the Great Mill Valley Fire. Historically, the largest and most destructive fires in Marin County, including the Vision Fire, the Angel Island Fire, and the Woodward Fire, have occurred under Diablo winds conditions.

**C. Wildfire Planning Efforts.** The Marin County Community Wildfire Protection Plan (CWPP) provides a scientifically based assessment of wildfire hazard and threat to homes in the wildland urban interface (WUI) of Marin County. The CWPP was developed through a collaborative process involving Marin County fire agencies, County officials, County, state, and federal land management agencies, and community members. The purpose of the CWPP is to provide fire agencies, land managers, and other stakeholders in Marin County with guidance and strategies to reduce fire hazard and the risk of catastrophic wildfires in the WUI, while promoting the protection and enhancement of the county's economic assets and ecological resources. The CWPP was most recently updated in 2020.

The Marin Wildfire Prevention Authority (MWPA) is made up of 17 member agencies and was formed to develop and implement a comprehensive wildfire prevention and emergency preparedness plan for most of the county. The MWPA's goals and objectives focus on vegetation management; wildfire detection, alert, and warning systems; residential assistance to reduce fire risks; evacuation; public outreach and education, and defensible space and home hardening. See section 20.2.3 Regional/Local Regulations for discussion of Measure C, which resulted in the creation of the MWPA.

The cities within Marin County, along with land management agencies, work to reduce fire hazards as directed by their management and planning documents. Planning is driven by the goals of protecting natural habitat and special-status species while managing the growth of invasive species. Management strategies can be challenging and require interagency cooperation and collaboration in fuel break and fuel reduction areas.

### **20.1.3 Access and Evacuation Setting**

**A. County Road System.** Many homes in Marin County are located on hillsides and ridges, with narrow and winding roads providing the only access routes through neighborhoods and

communities.<sup>8</sup> In addition, cul-de-sacs generally serve new housing developments and most of the smaller canyons, valleys, and hillsides. Some planned unit developments are accessed by privately maintained roads, which create access issues (i.e., narrow paved widths and limited on-street parking). According to California Fire Code specifications, roadways that are considered hazardous in terms of fire access and protection are those with: (1) less than 20 feet of unobstructed paved surface and 13.6 vertical feet; (2) dead-ends longer than 800 feet; and (3) cul-de-sac diameters less than 68 feet. Driveways that are less than 16 feet wide or that do not have adequate turnaround space are also considered hazardous. A large number of roadways and driveways in many of Marin County's communities fall into one or more of the above categories.

Vegetation maintenance adjacent to roadways is an issue throughout Marin County. Primary highways such as Highways 1, 101, and 37 are maintained at the state level by the California Department of Transportation (Caltrans). Other primary and secondary roads are maintained at the county, city, or town level. Primary and secondary roads in State Park or National Park Service lands are maintained by the land ownership agency. There are many private roads in unincorporated parts of Marin County. The California Civil Code requires that these roads be maintained by private property owners and responsibility be shared equitably by the landowners benefiting from these roads.

Communities in unincorporated Marin County may experience delayed evacuation during a wildfire. The County has identified the communities of Inverness and Sleepy Hollow as examples where existing conditions could delay evacuation efforts.

The community of Inverness is located in western Marin County on the Tomales Bay west of Point Reyes Station. Larger collector roads in Inverness are generally wide and of good condition; however, some local streets that branch off the collectors and directly serve homes, such as Highland Way, Vision Road, and Drake's View Drive, do not meet standard road widths for emergency vehicle access and/or wind across steep terrain. Under an evacuation order, narrow, steep, and/or winding roads in Inverness could substantially slow evacuation times as residents are funneled toward Sir Francis Drake Boulevard, the main arterial road and evacuation route in the area. Residents fleeing a wildfire in Inverness would use Sir Francis Drake Boulevard to travel south toward Pt. Reyes Station to access Highway 1. The intersection of Sir Francis Drake Boulevard and Bear Valley Road could become a choke point at which traffic travelling south from Inverness meets traffic traveling north on Bear Valley Road. The most significant evacuation choke point in the area would be the intersection of Sir Francis Drake Boulevard and Highway 1, where evacuees from Inverness would encounter traffic travelling south from Pt. Reyes Station. High traffic volumes alone would delay evacuation times, and in addition, the Lagunitas Creek bridge located just north of the Sir Francis Drake Boulevard/Highway 1 intersection could further slow evacuation efforts.

The community of Sleepy Hollow is located in Ross Valley between Lucas Valley Road to the north and Sir Francis Drake Boulevard to the south. The main concerns for evacuation in Sleepy Hollow are high population density and the presence of only one collector street, Butterfield Road, as an evacuation route that funnels to the main evacuation route in the area, Sir Francis Drake Boulevard. Residents in the Irving, Legend Herrera, Fawn, and Alameda neighborhoods would use local streets that empty almost entirely onto Butterfield Road, where evacuating

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<sup>8</sup>Marin Community Wildfire Protection Plan.

traffic would then travel south toward Sir Francis Drake Boulevard. The intersection of Butterfield Drive and Sir Francis Drake Boulevard would be a significant choke point during a wildfire evacuation; traffic from Sleepy Hollow would meet traffic moving west to east on Sir Francis Drake Boulevard. Smaller choke points could occur at the intersections of larger local streets, such as Van Winkle Drive, Irving Drive, Woodside Drive, and Butterfield Road. Steep terrain and substandard roads are less of an evacuation concern in Sleepy Hollow compared to Inverness, for example; however, some local streets, such as Oak Knoll Drive and Holstein Road, traverse fairly steep terrain and may not meet standard road width requirements along several stretches of the roadway.

B. County Fire Department Emergency Plans. To encourage evacuation preparedness among County residents, Marin County curates on its home website links to sources containing disaster preparedness materials. Ready Marin, a County emergency preparedness website, contains emergency planning checklists, a collection of links to disaster preparedness resources, and registration links for the Marin Community Emergency Response Team (CERT), a community disaster training program, and Get Ready, a one-hour recurring disaster training program facilitated by community volunteers. The Marin County Sheriff's Office provides disaster preparedness materials for families, functional needs populations, organizations, schools, County employees, and pet owners on its Preparedness & Recovery web portal. The Marin County Public Emergency Portal provides information on critical alerts systems, including AlertMarin and Nixle, severe weather alerts and weather radios, disaster preparedness social media feeds, and emergency and evacuation preparedness.

The Marin Operational Area (OA) Emergency Operations Plan (EOP) addresses the planned response to extraordinary emergency situations associated with large-scale disasters affecting Marin County. The Marin OA consists of the cities/towns, special districts, and the unincorporated areas within the County. The EOP establishes the emergency management organization required to mitigate any significant emergency or disaster affecting the Marin OA and establishes the overall operational concepts associated with Marin County's Emergency Operations Center (EOC) activities and the recovery process. The Marin Sheriff's Office of Emergency Services (OES) is responsible for periodic review, updates, and re-publishing and re-distribution of the EOP.

In 2022, the MWPA will be undertaking a new project to develop a comprehensive and interactive evacuation/ingress/egress risk assessment. The envisioned final product will create a rating system of roads, presenting a visual Risk Assessment of the County's roadways at various levels of aggregation (geographic areas, evacuation zones, and other). The user interface should allow registered users to easily identify which Risk Factors contribute to risk by area and modify the scoring of each Risk Factor as improvements are either proposed or completed, in a manner that is minimally subjective. In addition to the software platform, the list of project deliverables includes a report that reviews prior studies on evacuation to identify the reasons for casualties, fatalities, and disorder. The report is expected to present an initial list of Risk Factors for improvement, by area, by risk category, and by responsible agency.

The Risk Factors to be considered include, but are not limited to, road conditions and capacity, intersection functionality, observed traffic behavior, constraints and impediments, access from a fire response perspective, presence of vulnerable populations, vegetation impacts to roadways, defensible space conditions, structural vulnerability, and locations and capacity of temporary refuge areas. The assessment will integrate the data and findings of Marin's CWPP with Risk Factors related to evacuation. The Transportation Authority of Marin's TAMDM model provides traffic simulations using observed population and behavioral patterns for the County.

MWPA is also implementing wildfire detection, warning, and alert systems. The success of these systems depends on a well-maintained network of countywide evacuation routes and temporary refuge areas. A holistic approach towards evacuation efficiency will be developed through countywide programs, interagency partnerships and the funding of innovative technology to reduce loss of life and property during catastrophic wildfire events.

#### **20.1.4 Candidate Housing Sites**

The County identified “candidate housing sites” to consider for the 2023 to 2031 planning period for the Housing Element Update, with a potential of up to approximately 10,993 housing units. These candidate housing sites represent a greater number of sites than required by the RHNA (i.e., 3,569 units) and serve as the inventory from which the County’s actual RHNA requirement will be selected. For conservative environmental analysis, this larger number of sites is evaluated in this EIR, while the “proposed Project” comprises a total inventory of 5,214 residential units.

### **20.2 REGULATORY SETTING**

#### **20.2.1 Federal Regulations**

**Federal Disaster Mitigation Act of 2000.** The Disaster Mitigation Act of 2000 authorizes the Federal Emergency Management Agency (FEMA) to set mitigation planning requirements for state, local, and Indian Tribal governments as a condition of mitigation grant and disaster assistance and requires close coordination of mitigation planning and implementation efforts between FEMA and jurisdictions.

**Federal Land Assistance, Management and Enhancement Act of 2009 (National Cohesive Wildland Fire Management Strategy).** The current National fire strategy includes the Shared Stewardship Agreement, a joint state-federal initiative launched in August 2020 to reduce wildfire risks, restore watersheds, protect habitat and biological diversity and help the State meet its climate objectives. The federal government has made a commitment to match California’s goals of reducing wildfire risks on 500,000 acres of forest land per year.

**Healthy Forest Restoration Act of 2003.** This Act calls for preparation of Community Wildfire Protection Plans (CWPP) as planning and funding prioritization tools to create incentives for communities to engage in comprehensive fire hazard planning and to help define and prioritize local needs.

**National Fire Plan.** This Plan was developed in August 2000 by the USDA Forest Service and the Department of the Interior with the intent of actively responding to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future. The NFP addresses five key points: Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability. The NFP funds several community partnerships in Marin County to achieve greater wildland fire protection in the vicinity of Point Reyes National Seashore, Golden Gate National Recreation Area, and neighboring open space lands.

#### **20.2.2 State Regulations**

**California Department of Forestry and Fire Protection (CAL FIRE).** The California Department of Forestry and Fire Protection (CAL FIRE) protects life and property through fire prevention engineering programs, law and code enforcement and education. CAL FIRE



identifies areas within Local Responsibility Areas and recommends fire hazard severity zones; CAL FIRE also designates fire hazard severity zones (FHSZ) for areas within State Responsibility Areas.

As discussed under Section 20.1.1, CAL FIRE has a legal responsibility to provide fire protection in SRA in the County. Marin County is a “Contract County” with CAL FIRE. CAL FIRE does not directly protect SRA in the County but rather contracts with the Marin County Fire Department (MCFD) to provide wildland fire protection and associated fire prevention activities for the SRA, which comprises more than half of the total land area in the County. Contract Counties are responsible for providing initial attack response to fires on SRA within their counties. CAL FIRE provides funding to the County for prevention and suppression of wildland fire on the SRA. This funding provides fire protection services including salary and wages of suppression crews, maintenance of firefighting facilities, pre-fire management positions, special repairs, and administrative services. Currently, CAL FIRE funds 68 fire stations, 82 fire engines, 12 bulldozers, 10 fire prevention officers, and positions within the 6 emergency command centers of the six Contract Counties in the state. CAL FIRE also provides other services to Contract Counties, including urban forestry grants, resource management assistance, fire investigation support, and training.

**Office of the State Fire Marshal (OSFM).** The Office of the State Fire Marshal (OSFM) protects life and property through fire prevention engineering programs, law and code enforcement and education, and management and protection of natural resources in the state, including protection of watershed and wildlife, as well as renewal of timber resources. The OSFM enforces fire-related laws in state-owned or operated buildings, investigates arson fires, licenses fire protection system inspectors and service personnel, and other regulatory and inspection duties.

**2018 California Strategic Fire Plan.** The Plan provides broad direction to CAL FIRE for implementing fire prevention, natural resource management, and fire suppression programs, focusing on activities that improve availability and use of hazard and risk assessment information and increase collaboration with all stakeholders while supporting local planning. The Plan also seeks to foster a shared vision among communities and multiple fire protection jurisdictions while increasing awareness of actions to improve fire resistance of the built environment assets at risk. Other Plan components include preventing wildland fire threats to ecosystem health through natural resource management and implementing post-fire protection and recovery assessments and actions.

**California Climate Adaptation Strategy (2021).** The California Climate Adaptation Strategy is formulated to strengthen protections for climate vulnerable communities. Part of this Strategy relates to wildfire risk and prevention, such as improving and refining quantitative wildfire risk assessments across California to identify the most wildfire vulnerable communities and populations; supporting wildfire prone communities by expanding the Regional Forest and Fire Capacity Program and increasing local and regional government capacity to build and maintain projects to improve forest health and prevent wildfire; and reducing health impacts of wildfire smoke (including improving wildfire smoke guidance for schools, children, and other vulnerable populations). The Strategy also identifies the need to reduce risk from energy infrastructure-related ignitions that can lead to wildfire. In addition, the Strategy promotes “climate smart” forest management – such as reintroducing prescribed fire onto landscapes – as a means to reduce the threat of wildfire; supports increase in the pace and scale of wildfire resilience and forest health projects; and calls for reducing wildfire risks through increased use

of fuel breaks and fuels reduction and expediting the permitting of wildfire resilience projects using exemptions or the California Vegetation Treatment program.

**Wildfire and Forest Resilience Action Plan (2021).** The Wildfire and Forest Resilience Action Plan promotes actions to restore the health and resilience of California forests, grasslands, and natural places; improve the fire safety of our communities; and sustain the economic vitality of rural forested areas through a variety of activities. The Plan calls for increasing forest management efforts to meet the state and federal 2025 target of restoring one million acres of restoration annually. In addition, the Plan states that the use of prescribed fire statewide would be expanded significantly, including fuel breaks and reforestation of areas burned by catastrophic fire. The Plan calls for support of communities, neighborhoods, and residents in increasing their resilience to wildfire; utilizing a statewide network of regional plans to ensure coordinated, comprehensive action across the state; and developing a comprehensive program to assist private forest landowners. In addition, the Plan would improve and align forest management regulations and spur innovation and create opportunities for the use of forest materials that store carbon, reduce emissions, and contribute to sustainable local economies.

**AB 38 (2019) California Wildfire Mitigation Financial Assistance Program (Government Code §8654.7 and §8654.10; Public Resources Code §8389.5).** AB 38 established a comprehensive wildfire mitigation financial assistance program to encourage cost-effective structure hardening and retrofitting to create fire-resistant homes, businesses, and public buildings. The bill required the State Fire Marshal, in consultation with specified State officials, to identify building retrofits and structure hardening measures, and CAL FIRE to identify defensible space, vegetation management, and fuel modification activities, that are eligible for financial assistance under the program. The bill specifies the types of designated wildfire hazard areas eligible for funding under the program.

**AB 1823 (Committee on Natural Resources, 2019) Fire Risk Reduction Communities (Public Resources Code §4290.1).** AB 1823 amended PRC Section 4290.1 to require that, on or before July 1, 2022, the State Board must develop criteria for and maintain a list of local agencies considered to be a “Fire Risk Reduction Community” located in the state responsibility area (SRA) or very high fire hazard severity zone (VHFHSZ), identified pursuant to GC§51178, that meet best practices for local fire planning. Criteria that must be used to develop the Fire Risk Reduction Community list include recently developed or updated community wildfire protection plans (CWPP), adoption of the board’s recommendations to improve the Safety Element, participation in Fire Adapted Communities and Firewise USA programs, and compliance with the Board’s minimum fire safety standards. For example, any new road in the SRA will need to comply with State regulations governing access. Standards extend to road steepness, curvature, and width.

**California Fire Code (California Code of Regulations, Title 24, Part 9).** The County of Marin has adopted the 2019 California Fire Code, with amendments to address specific local conditions and needs. These provisions include construction standards and fire hydrant requirements, road widths and configurations designed to accommodate the passage of fire trucks and engines, and requirements for the handling and storage of hazardous materials.

**California Public Resources Code 4291 (PRC 4291).** PRC 4291 requires homeowners to address wildland fire hazards through creation of defensible space and other building construction mitigation measures.

**California Code of Regulations, Title 19.** Title 19, chapters one through six of the California Code of Regulations (CCR), establishes regulations related to emergency response and preparedness under CAL EMA.

**California Health and Safety Code (Sections 13000 et seq.).** This statute establishes State fire regulations, including regulations for building standards (also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

**Tentative Map and Parcel Map Requirements, Government Code (GC) §66474.02.** GC§66474.02 requires a legislative body of a county to make specific findings before approving a tentative map, or a parcel map for which a tentative map was not required, for any area located in the SRA or VHFHSZ. The findings must show that that the subdivision is consistent with regulations adopted by the State Board pursuant to Sections 4290 and 4291 of the Public Resources Code (PRC) or consistent with local ordinances certified by the State Board as meeting or exceeding the State regulations. The county must also submit a copy of the findings to the State Board. Certain tentative maps or parcel maps for purposes of open space and conservation are exempt, as specified in the statute. Information on how to submit these subdivision maps to the State Board can be found in the California Code of Regulations (CCR), Title 14, §§1266.00, 1266.01, and 1266.02.

### **Recent State Legislative Initiatives**

The following are recent State of California legislative initiatives that show the direction the State is taking in proactively addressing increased wildfire risks. They serve as a guide for planning for communities throughout California.

- SB 332: Controlled Burn Bill (Chaptered on October 6, 2021): SB 332 would reduce potential liability for fire suppression costs that incurred fighting a fire if those fires are sparked by controlled burns intended to reduce wildfire hazard; purpose is to promote controlled burns by reducing liability for those performing controlled burns.

- SB 85: Wildfire Package (Chaptered on April 13, 2021): SB 85 includes \$536 million to fund projects to restore the ecological health of forests and watersheds, fuel breaks around vulnerable communities, statewide fire prevention grants targeting projects to advance community hardening, and improvements to defensible space to mitigate wildfire damage.

- AB 9: Creates Entity Dedicated to Wildfire Prevention Work and Regional Forest and Fire Capacity (Chaptered on September 23, 2021): AB 9 creates new branch in Office of the State Fire Marshal to focus exclusively on community fire prevention, preparedness, and mitigation efforts of CAL FIRE. Supports regional leadership to build local and regional capacity and develop, prioritize, and implement strategies and projects that create fire adapted communities and landscapes by improving ecosystem health, community wildfire preparedness, and fire resilience.

- AB 642: Enhance Fire Prevention Efforts (Chaptered on September 28, 2021): AB 642 directs the Director of the Department of Forestry and Fire Prevention to designate moderate and high fire hazard severity zones. Makes changes to State law to enhance wildland fire prevention efforts, including, incorporating, and facilitating cultural burning practices. Also requires the

Director of the Department of Forestry and Fire Protection to designate a cultural burning liaison.

- SB 63: Fire prevention; vegetation management (Chaptered on September 28, 2021): SB 63 provides for fuel modification beyond the property line if necessary to maintain 100 feet of defensible space, as applicable; would also require State Fire Marshal and Department of Housing and Community Development to consider, if appropriate, expanding application of fire protection building standards (as specified for building in fire hazard severity zones) to expand application of these building standards to moderate fire hazard severity zones.

- AB 38: California Wildfire Mitigation Financial Assistance Program (Chaptered on October 2, 2019): AB 38 established a comprehensive wildfire mitigation financial assistance program to encourage cost-effective structure hardening and retrofitting to create fire-resistant homes, businesses, and public buildings. The bill requires the State Fire Marshal, in consultation with specified State officials, to identify building retrofits and structure hardening measures, and CAL FIRE to identify defensible space, vegetation management, and fuel modification activities, which are eligible for financial assistance under the program. The bill specifies the types of designated wildfire hazard areas eligible for funding under the program. AB 38 also requires on or after January 1, 2021, the seller of any real property located in a high or very high fire hazard severity zone to provide a prescribed disclosure notice to the buyer, if the home was constructed before January 1, 2020, of information relating to fire hardening improvements on the property and a list of specified features that may make the home vulnerable to wildfire and flying embers and which features, if any, that exist on the home of which the seller is aware. By July 1, 2025, requires the disclosure notice to also include the State Fire Marshal's list of low-cost retrofits, and a specified final inspection report or information on where a copy may be obtained. Also requires on or after July 1, 2021, specified documentation to the buyer that the real property is in compliance with the wildfire protection measures or a local vegetation management ordinance, or enter into an agreement with the buyer pursuant to which the buyer will obtain documentation of compliance, as provided.

- AB 2911: Fire Safety (Chaptered on September 21, 2018): AB 2911 includes various changes to fire safety planning efforts including:

- Requires a local agency to transmit a copy of its adopted ordinance designating very high fire hazard severity (VHFHS) zones to the Board of Forestry and Fire Protection (Board);
- Removes exemptions from requirement that a local agency designate, by ordinance, very high fire hazard severity zones in its jurisdiction within 120 days of receiving recommendations from the director of CAL FIRE;
- Requires, before July 1, 2020, the Office of Planning and Research to update the guidance document entitled "Fire Hazard Planning General Plan Technical Advice Series" and update not less than once every eight years;
- Authorizes the Board of Forestry, within 15 days of receipt of notification that its fire prevention recommendations will not be accepted by the local government, to request a consultation, prior to approval of the draft element or amendment, conducted in person, electronically, or by phone; and

- Requires on or before July 1, 2021, and every five years thereafter, the Board, in consultation with the State Fire Marshal (SFM), to survey local governments to identify existing subdivisions (more than 30 dwelling units) in State Responsibility Areas (SRA) or Very High Fire Hazard Severity (VHFHS) zones without a secondary egress route that are at significant fire risk.

- SB 99: General Plans: Safety Element: Emergency Evacuation Routes (Chaptered on August 30, 2019): SB 99 requires the safety element of the general plan, upon the next revision of the housing element on or after January 1, 2020, to identify any residential developments in any hazard area that does not have at least two emergency evacuation routes.

- SB 1241: Land Use: General Plan Safety Element: Fire Hazard Impacts (Chaptered on September 13, 2012): SB 1241 required cities and counties to address fire risk in the State Responsibility Areas (SRA) and Very High Fire Hazard Severity Zone (VHFHSZ) in the Safety Element of their general plans upon the next revision of the housing element and requires cities and counties to make certain findings regarding available fire protection and suppression services before approving a tentative map or parcel map. Requires review of Draft Safety Element by the Board of Forestry and CAL FIRE Land Use Planning Program staff, as well as to every local fire agency having jurisdiction.

- SB 1260: Fire Prevention and Protection (Chaptered on September 21, 2018): SB 1260 promoted long-term forest health and wildfire resiliency. It made various changes related to local fire planning, prescribed fire requirements, and broader fire prevention efforts, including the following:

- Requires a local agency to transmit a copy of its adopted ordinance designating VHFHS zones to the Board within 30 days of adoption;
- Removed exemptions from the requirement that a local agency designate, by ordinance, VHFHS in its jurisdiction within 120 days of receiving recommendations from the director of CAL FIRE;
- Authorizes the Board to recommend changes to a planning agency's safety element for methods and strategies accepted as best practices in the most recent guidance document entitled "Fire Hazard Planning, General Plan Technical Advice Series";
- Requires a city or county that contains either SRA or VHFHS zones to notify the Board if it adopts or amends the safety element of its general plan; and
- Requires, upon approving a tentative map or a parcel map for an area located in either the SRA or VHFHS zone, the local agency to transmit a copy of the minimum fire safety standards findings required and accompanying maps to the Board.

- Government Code §51175-51189 Fire Safe Regulations: Minimum fire safety standards gives the State Board of Forestry the authority to adopt regulations for minimum fire safety standards applicable to SRA lands under the authority of the department, and to VHFHSZs starting on July 1, 2021. The Fire Safe regulations are codified in CCR, Title 14 (Natural Resources), Division 1.5 (Department of Forestry), Chapter 7 (Fire Protection) under Subchapter 2 (SRA Fire Safe Regulations). These regulations generally address the following:

- Standards for signs identifying streets, roads, and buildings.
- Minimum private water supply reserves for emergency fire use.
- Fuel modification standards for fuel breaks and greenbelts.
- Road and driveway standards for emergency fire equipment access and public evacuation.

- AB 1823: Fire Risk Reduction Communities (Chaptered on October 2, 2019): AB 1823 amended PRC Section 4290.1 to require that, on or before July 1, 2022, the State Board must develop criteria for and maintain a list of local agencies considered to be a “Fire Risk Reduction Community” located in the SRA or VHFHSZ, identified pursuant to GC§51178, that meet best practices for local fire planning. Criteria that must be used to develop the Fire Risk Reduction Community list include recently developed or updated community wildfire protection plans (CWPP), adoption of the board’s recommendations to improve the Safety Element, participation in Fire Adapted Communities and Firewise USA programs, and compliance with the Board’s minimum fire safety standards. For example, any new road in the SRA will need to comply with State regulations governing access. Standards extend to road steepness, curvature, and width. The result is to add costs to construction and further constrain housing sites.

### 20.2.3 Regional/Local Regulations

**Marin County Multi-Jurisdiction Local Hazard Mitigation Plan (MCM LHMP) (2018).** The Marin County Multi-Jurisdiction Local Hazard Mitigation Plan involves the 11 incorporated towns and cities in the County, the North Marin Water District, and the County’s input on the unincorporated territories, with an overall strategy to assess risks posed by natural hazards and to develop a mitigation strategy for reducing risks in the County. The plan focuses on mitigation *before* rather than after disasters by: (1) identifying natural hazards faced by the communities, the water district, and the County (e.g., earthquakes, flooding, wildfire); (2) assessing the communities’, the water district’s, and County’s vulnerability to these hazards; and (3) identifying specific preventive actions that can be taken to reduce the risk from the hazards.

The plan, which has been approved by the 11 incorporated towns and cities, the water district, and the Marin County Board of Supervisors, fulfills the requirements of the Federal Disaster Mitigation Act of 2000.

**Marin County Emergency Operations Plan (2014).** The Marin Operational Area (OA) Emergency Operations Plan (EOP) addresses the County’s planned response to emergency situations associated with disasters, including wildfire. The EOP establishes the organization and management of the County’s Emergency Operations Center (EOC), which administers mutual aid requests for fire support (e.g., firefighting resources and personnel) to combat wildland/urban interface fire and requests for statewide resources via the State’s Master Mutual Aid Agreement (administered by the State OES). During an emergency, the EOC engages in situation analysis, public information, response coordination, and resource coordination to direct Marin County operational resources.

**Strategic Fire Plan for Marin County (2012).** The Strategic Fire Plan identifies and prioritizes pre-fire and post-fire management strategies and tactics to reduce loss due to fire within the County. The Plan, collaboratively developed by Federal, State, City, and County agencies within the County and other interested parties, is intended for use as a planning and assessment tool.

It provides an overview of the County's fire setting and geographic, topographical, and climate characteristics and challenges; describes firefighting capabilities and agencies throughout the County; and identifies at-risk communities and natural resource assets for employment of pre-fire management strategies (raising public awareness through information and education programs, enforcement of more stringent building standards, vegetation management and defensible space, and fire apparatus access and water supply requirements for structures in wildland-urban interface areas).

**2017-2020 Marin County Fire Department Strategic Plan.** The Marin County Fire Department's Strategic Plan outlines priorities for fire, rescue, prevention, and emergency medical services for a three-year period. The Plan guides Fire Department planning related to department policy, operational, and budget decisions; maintaining a highly trained work force; providing oversight and management of department programs; and increasing fire department personnel safety and community education.

**Marin County Unit Strategic Fire Plan & Community Wildfire Protection Plan (2021).** The Marin County Unit Strategic Fire Plan, updated in 2021, describes the County's fire environment (topography, weather, vegetation and fuel characteristics, and variability of climate); the capabilities and preparedness of Fire Agencies in the County, including agency coordination; the County's watersheds and water districts; and the Wildland Urban Interface. The Plan also discusses the relationship of biodiversity with fire prevention and challenges plus the potential for loss due to fire. The Plan provides an overview of demographics (population and housing), including seasonal flux in population (due to tourists and other transient population shifts typically occurring during the summer fire season), and land ownership and other stakeholders. The Plan also assesses county-level fire hazards in depth, with modeling for different fire scenarios, and outlines evacuation planning and preparation steps.

**Marin Community Wildfire Protection Plan (2020).** The Marin County Community Wildfire Protection Plan (CWPP) provides a scientifically based assessment of wildfire hazard and threat to homes in the wildland urban interface (WUI) of the County. The CWPP was developed in accordance with the Healthy Forests Restoration Act and represents analysis and modeling work conducted in 2020. The Plan prioritizes hazardous fuel reduction strategies and addresses measures to reduce structural ignitability that can be undertaken by community members. The Plan was designed with the purpose of providing guidance and strategies for fire agencies, land managers, and other stakeholders in the County to reduce fire hazard and the risk of catastrophic wildfires in the WUI, while promoting the protection and enhancement of the county's economic assets and ecological resources.

**Marin Wildfire Prevention Authority.** In 2020, a Joint Powers Agreement was entered into among 17 member agencies covering most of Marin County, with the purpose of creating more fire adapted communities as outlined in the Marin County Community Wildfire Protection Plan (CWPP). A tax measure (Measure C) was approved by voters to fund the Marin Wildfire Prevention Authority. Programs include reducing flammable vegetation, improving detection and evacuations, operating local grant programs to assist residents in reducing fire risks, public education and outreach, and providing funding and technical resources for defensible space structure and landscape evaluations.

**Marin County Fire Department Prevention Bureau.** The Marin County Fire Department Prevention Bureau is responsible for minimizing or preventing damage to life and property resulting from fire. Supervised by the Fire Marshal, the Bureau develops amendments to the fire code and fire prevention standards; enforces fire safety and law enforcement sections of the fire

code and Public Resources Code (PRC); manages the Residential Wildfire Hazard Reduction and the Business Inspection Programs; conducts fire investigation, fire and life safety programs in County Fire-identified “direct protection areas”; and provides review of land development and building plans as part of fire permit issuance.

**Marin County Fire Department Fire Protection Standard 220 – Vegetation Fuels Management Plan.** Standard 220 was developed pursuant to Appendix II A of the Uniform Fire Code, adopted by local Ordinance, and Section 4290 and 4291 of the Public Resources Code. Fuel modification distances, type of vegetation and topographic features are factors in determining adequate green belts and fire fuel modification around structures. This methodology is implemented for the primary purpose of providing time for fire suppression personnel and equipment to respond and establish effective operational tactics and strategies during an ensuing wildland fire.

This standard applies to all new homes and structures, subdivisions, and buildings that are undergoing substantial remodel that are within the Wildland-Urban Interface as defined by the Marin County Fire Department. The standard includes requirements for submitting a vegetation management plan (VMP) and a fire-hazard-assessment matrix that defines the recommended extent of defensible space based on site features including aspect, slope, and vegetation type. Guidelines for treating vegetation within the recommended defensible space are also provided.

This standard will determine the minimum required defensible space without reference to property lines. If the minimum required defensible space crosses property lines, the property owner will be required to obtain a “defensible space easement” from the adjoining property owner. If this cannot be obtained, the proposed structure may be required to be re-sited. For existing structures, additional fire protection measures may be required to mitigate a reduction in the required defensible space.

**Marin Countywide Plan (2007).** The 2007 Marin Countywide Plan (CWP) addresses hazards due to wildfire conditions. Applicable adopted CWP policies and implementing programs from Section 2.6 Environmental Hazards of the Natural Systems and Agriculture Element include:

**Natural Systems and Agriculture Element – Environmental Hazards policies**

- Policy EH-4.1 Limit Risks to Structures. Ensure that adequate fire protection is provided in new development and when modifications are made to existing structures.
- Policy EH-4.2 Remove Hazardous Vegetation. Abate the buildup of vegetation around existing structures or on vacant properties that could help fuel fires. (See also Natural Systems and Agriculture Element, BIO-1.4, Support Vegetation and Wildlife Disease Management Programs).
- Policy EH-4.3 Adopt and Implement a Fire Management Plan. Develop a proactive approach to manage wildfire losses by identifying hazard risks and enacting effective mitigation strategies.
- Policy EH-4.4 Ensure Adequate Emergency Response. Ensure that there is an adequate number of trained and certified emergency medical technicians to address the increase in medical demand.



- Policy EH-4.5 Regulate Land Uses to Protect from Wildland Fires. Use land use regulations, including but not limited to subdivision approvals and denials, as means of protecting people and property from hazards associated with wildland fires.
  - Implementing Program EH-4.a Provide Information About Fire Hazards. Work with FIRESafe Marin, the Marin County Fire Department, and local, regional, and State agencies to make maps of areas subject to wildland fire hazard publicly available, and to provide public information and educational programs regarding fire hazards, and techniques for reducing susceptibility to fire damage and areas of low water pressure.
  - Implementing Program EH-4.b Restrict Land Divisions. Prohibit new land divisions in very high and high fire hazard areas unless the availability of adequate water for fire suppression is demonstrated and guaranteed; access for firefighting vehicles and equipment is provided from more than one point; necessary fire trails and fuel breaks are provided; fire-resistant materials are used exclusively in construction; and adequate clearances from structures and use of fire-resistant plants in any landscaping is required.
  - Implementing Program EH-4.c Require Compliance with Fire Department Conditions. Continue to refer land development and building permit applications to the County Fire Department or local fire district for review, and incorporate their recommendations as conditions of approval as necessary to ensure public safety. Continue to require compliance with all provisions of the most recently adopted version of the California Fire Code (with local amendments).
  - Implementing Program EH-4.d Review Applications for Fire Safety. Require applicants to identify defensible space and compliance with fire safety standards, and continue to work with local and State fire agencies to ensure that California Fire Code (with local amendments), County Development Code, and State standards for construction are applied uniformly countywide.
  - Implementing Program EH-4.e Require Sprinkler Systems. Continue to require installation of automatic fire sprinkler systems in all new structures and existing structures undergoing substantial remodeling, and provide incentives for sprinkler installation in all other habitable structures, especially those in high fire hazard areas.
  - Implementing Program EH-4.f Require Fire-Resistant Roofing and Building Materials. Continue to require and provide incentives for Class A fire-resistant roofing for any new roof or replacement of more than 50% of an existing roof. Work with Marin County fire departments to prepare and adopt an ordinance requiring fire-resistant building materials in extreme and high fire hazard areas.
  - Implementing Program EH-4.g Develop and Maintain Fuel Breaks and Access Routes. Work with public agencies and private landowners to construct and maintain fuel breaks and emergency access routes to facilitate effective fire suppression.
  - Implementing Program EH-4.h Require Adequate Clearance. Require standards for clearance of vegetation on vacant lots, and around structures, and landscaped areas to ensure timely and adequate removal of potential fire fuel on both public and private property.

- Implementing Program EH-4.i Use Varied Methods to Provide Fuel Breaks and Fire Suppression. Use the best fuel reduction methods (depending on the time of year, fuel types, reduction prescriptions, and cost) to implement the Marin County Community Wildfire Protection Plan. This may include using CDF inmate crews, the Tamalpais Fuel Crew, the Marin Conservation Corps, animal grazing, or fuel reduction contractors.
- Implementing Program EH-4.j Conduct Life Safety Assessments. Conduct a life safety assessment that considers the costs of fire safety maintenance prior to the County purchase of new land and facilities.
- Implementing Program EH-4.k Adopt Amended Urban Wildlands Interface Regulations. Work with Marin fire departments to prepare and adopt urban wildlands interface regulations for new development and substantial remodels in order to reduce fire hazards in high and extreme fire hazard areas.
- Implementing Program EH-4.l Continue FIRESafe Marin Program. Continue the various education efforts and safety projects sponsored by FIRESafe Marin and implemented through each neighborhood.
- Implementing Program EH-4.m Continue to Use Technology to Promote Fire Safety. Continue to apply computer technology, such as Geographic Information Systems, vegetation inventory, and air movement modeling programs, to identify, analyze, and plan for potential fire hazards. Notify affected parties of any relevant findings.
- Implementing Program EH-4.n Evaluate Development Standards. Request Fire Department review of County requirements for peak-load water supply and roadways (especially on hillsides) to determine whether those provisions need modification, such as limiting one-way road use, grade/slope limits, minimum radius, and turnaround widths, to ensure adequate fire protection and suppression.
- Implementing Program EH-4.o Support a Fire Management Plan. Adopt a resolution supporting a Fire Management Plan (including a fuel break plan), and encourage Marin cities and towns to also support its recommendations.
- Implementing Program EH-4.p Provide Paramedics as Needed. Assess the adequacy and number of firefighters trained as emergency medical technicians, and train more paramedics or firefighters, as needed.

**Marin County Development Code (Title 22 of the Marin County Code).** The Marin County Fire Department and Community Development Agency have identified that fire protection modifications to locally adopted codes, including the California Building Code (CBC), California Residential Code (CRC) and California Fire Code (CFC), are reasonably necessary because of Marin's local climate and topography. California Building Code (CBC) Chapter 7A specifically addresses the wildland fire threat to structures by requiring the use of fire-resistant materials and construction techniques. New buildings, additions and exterior remodels to buildings located in any FHSZ or any WUI fire area designated by the enforcing agency constructed after the application date shall comply with the provisions of chapter 7A as amended. These requirements only apply to new construction and do not address existing structures or remodels and additions to existing structures. Marin Municipal Code Chapter 19.04.064 Exterior wildfire exposure requirements for additions and exterior remodels address remodels and additions to existing structures.

Marin County has adopted the 2019 California Building Code and 2018 International Building Code with the following amendments:

- Chapter 16.16.04 – Amendments made to the 2019 California Fire Code, 2018 International Fire Code and 2018 International Wildland-Urban Interface Code.
- Chapter 19.04.064 Exterior wildfire exposure requirements for additions and exterior remodels.
- Chapter 22.57.0801 – C-RSP Coastal residential single family planned districts.
- Chapter 22.16.03 General Standards.
- Chapter 22.26.30 and 22.26.40 Landscaping.
- Chapter 24.04.110 and 24.04.120 Roads.
- Chapter 24.04.250, 24.04.260, 24.04.265 and 24.04.280 Driveways
- Chapter 24.05.010, 24.05.040, 24.05.080, and 24.05.090 Easements

### **20.3 IMPACTS AND MITIGATION MEASURES**

This section describes potential impacts related to wildfire that could result from the Project and discusses Project policies and implementing programs that would avoid or reduce those potential impacts.

#### **20.3.1 Thresholds of Significance**

Based on Appendix G of the State CEQA Guidelines, implementation of the Project would have a significant impact related to wildfire if it would:

- A. Substantially impair an adopted emergency response plan or emergency evacuation plan;
- B. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire;
- C. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment;
- D. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes; or
- E. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. *[Note: This threshold has been moved from Chapter 11, Hazards and Hazardous Materials, and included in this Chapter.]*

### 20.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts

This section contains the proposed revised and new policies and implementing programs from the Safety Element Update that would avoid or reduce significant wildfire impacts. The Housing Element Update does not contain policies or implementing programs that specifically address wildfire impacts. Underline text indicates new policy language and ~~strikeout~~ text indicates existing policy text proposed for deletion.

Policy EHS 2.1 Enhance Public Awareness. Make hazard studies, data, maps, services, and related information more accessible to residents and include more robust and targeted outreach in vulnerable communities.

Policy EHS 2.2 Improve Information Base. Support scientific studies and other technical planning efforts that increase and refine the body of knowledge regarding hazardous conditions in Marin County.

Policy EHS 2.3 Disaster Readiness. Maintain a level of preparedness to respond to emergency situations that will save lives, protect property, and facilitate recovery with minimal disruption.

Policy EHS 2.4 Effective Emergency Access and Evacuation. Ensure that first responders have adequate emergency access routes and that County residents, businesses, workers, and visitors can effectively evacuate during or after a disaster.

Policy EHS 2.5 Adequate Services. Improve existing and increase future capacity of critical services and infrastructure.

Policy EHS-5.2 Ensure Adequate Fire Protection. Ensure that adequate fire protection, including adequate evacuation routes, is provided in new development and when modifications are made to existing development.

Policy EH-5.5~~3~~ Regulate Land Uses to Protect from Wildland Fires. Use land use regulations, including but not limited to subdivision approvals and denials and permits for remodeling existing structures, as means of protecting people and property from hazards associated with wildland fires.

Policy EH-5.4~~4~~ Limit Risks to Structures. Ensure that adequate fire ~~protection~~ protective features are in place in new development and when modifications are made to existing structures.

Policy EHS-5.2~~5~~ Remove Hazardous Vegetation. Abate the buildup of vegetation around existing structures or on vacant properties that could help fuel fires.

Program EHS-1.1.c Prevent Displacement of Vulnerable People. Work with community-based organizations to develop and support temporary housing solutions for lower income immigrants, older adults, and other vulnerable groups during and after an emergency. Provide priority access to housing developed for community residents and those who have been displaced following disasters.

Program EHS-1.1.e Assist with Physical Evacuation. Improve notification and tracking systems to ensure all known individuals who have difficulty physically evacuating are accounted for during and following disasters.

Program EHS-2.1.a Distribute Maps. Prepare Update regularly and make available to the public maps depicting evacuation routes and areas prone to environmental hazards.

Program EHS-2.1.b Develop an Inclusive Public Outreach and Engagement Strategy. Collaborate with local, regional, state, and federal partners to develop a community-wide outreach program to educate a diverse community on how to prepare and recover from climate change effects. Sponsor and support education programs pertaining to emergency/disaster preparedness and response protocols and procedures. Work to fill gaps in local information to ensure information is useful and able to be implemented. Materials should be developed in multiple languages and in several formats to reach all residents. Distribute information about emergency preparedness to residents, community groups, schools, religious institutions, transient occupancy establishments, and business associations. Include instruction on ZoneHaven and evacuation zones in educational materials. (See also EH-1.1b)

Program EHS-2.2.a Improve Hazard Information. Continue to improve available hazard information and knowledge base. Track changing hazard risk and impacts and identify gaps in hazard information and mapping. Support scientific study of hazard potential in Marin, including by providing investigators with access to public land and facilitating access to other areas.

Program EHS 2.3.a Update the Emergency Recovery Plan. Update the County's emergency recovery plan, which addresses the steps that will be taken when an emergency situation occurs and during the immediate aftermath. Incorporate a framework for short-term immediate assistance for residents who have lost housing and access to resources and long-term housing re-construction plans, re-construction of facilities and infrastructure, including those essential for critical medical services and utility services, and aid-based reimbursement for eligible disaster-related costs. Identify federal, state, tribal, regional, and private sector programs and assistance to supplement local disaster response efforts. Integrate the MCM LHMP mitigation actions and EOP, where relevant, into the Emergency Recovery Plan.

Program EHS-2.3.d Support Community-Led Response and Neighborhood Preparedness. Improve strategies to identify and include civic leaders and the public in the disaster recovery decision-making process and implementation of post-disaster recovery programs. Identify a county designee to collaborate with the community and assist in developing the community preparedness and response strategies. Support community and neighborhood efforts in developing localized emergency response and preparedness plans by providing guidance and hazard data.

Program EHS-2.3.e Provide and Support Emergency Preparedness Training. Support the activities of Local Disaster Councils and fire departments in offering community emergency response training courses. Provide and support on-going disaster preparedness and hazard awareness training to all County employees, other responding agencies, and Local Disaster Councils. Ensure training occurs regularly, such as every three years, and includes emergency response approaches to vulnerable populations that cannot respond to a disaster without assistance.

Program EHS-2.3.f Encourage Road Improvements. Reduce regulatory impediments to road construction, widening, and other improvements by amending relevant sections of Marin County Code Titles 22, 23, and 24 to eliminate discretionary permit requirements and replace them with ministerial review to ensure that both public and private roads comply with codified engineering standards.

Program EHS-2.4.a Maintain and Improve Disaster and Emergency Response Notification System. Continue to maintain and refine the existing Alert Marin system for disaster and emergency response notifications. Work to identify and close gaps in the ability of all residents to receive disaster and emergency response notifications and information, such as those without telecommunication devices or internet access.

Program EHS-2.4.b Adopt Proactive Preparedness. Update disaster preparedness and response plans, regulations, and programs periodically to respond to new hazard data and changing hazard conditions.

Program EHS-2.4.c Identify and Improve Deficient Evacuation Routes. Implement findings of the Marin Wildfire Protection Authority Evacuation Ingress-Egress Risk Assessment. Use the visual risk assessment and risk factors to identify and prioritize existing deficient evacuation routes. Improve evacuation routes based on the prioritization ranking, but also in consideration of improvements required for a transportation network which is resilient to flooding and inundation from sea level rise.

Program EHS-2.4.d Create New Evacuation Routes. Identify and construct additional local evacuation routes in areas of high hazard concern or limited mobility.

Program EHS-2.4.e Ensure Access to New Development. Require new development to include adequate roadway ingress/egress for emergency access and evacuation routes.

Program EHS-2.5.a Assess Critical Services Capacity. Conduct an assessment of existing critical services for adequate capacity considering the projected scale of new development and climate change-induced increases in the severity of hazards. Use the service capacity assessment to create or update minimum standards for existing and future development to meet current and future anticipated demands for infrastructure (e.g., water, sewer, roads), privately provided services (e.g., telecommunications, gas, electricity), and County provided services (e.g., police, fire). Purchase permanent and/or portable generators for critical facilities, infrastructure, and services that lack adequate backup power.

Program EHS-2.5.b Explore Creation of New Evacuation Centers. Assess the potential for existing community facilities, including but not limited to libraries, churches/places of worship, schools, community and recreation centers, nonprofits, and local businesses, to serve as evacuation centers. Evacuation centers should be outfitted to provide material assistance, phone charging during a power outage, air conditioning during a heatwave, organize welfare checks on vulnerable neighbors, or deliver other services. Consider leveraging potential community resiliency hubs to provide evacuation center services and equipment when standalone evacuation centers are infeasible.

Program EH-23.3.b Protect Development from Increased Geologic Hazards. Plan for and protect development from increased risk of landslide, debris flows, post-fire debris flows, and subsidence resulting from climate change impacts by implementing Stability Report requirements and subsidence evaluation guidelines.

Program EHS-5.1a Collaborate with Marin Wildfire Protection Authority on Implementation of the Community Wildfire Protection Plan. Continue to collaborate with Marin Wildfire Protection Authority on implementing the Marin Community Wildfire Protection Plan programs and encourage Marin cities and towns to also support its recommendations.

Program EHS-4.15.1.b Continue FIRESafe Marin Program Wildfire Education. Continue the various education efforts and safety projects sponsored by FIRESafe Marin Marin Fire Agencies and implemented through each neighborhood. Education and outreach efforts should include all vulnerable populations, be specific to each community, and focus on community led safety programs. Encourage community participation in programs such as Firewise USA that can help neighbors get organized, find direction, and take action to increase preparedness and reduce ignition risk of homes and structures. Encourage community participation in programs such as Firewise USA that can help neighbors get organized, find direction, and take action to increase preparedness and reduce ignition risk of homes and structures.

Program EHS-4.a 5.1.c Provide Information About Fire Hazards. Work with Marin Fire Agencies, FIRESafe Marin, the Marin County Fire Department, and other local, regional, and State agencies to make maps of areas subject to wildland fire hazard, publicly available, and to provide public information and provide publicly available and accessible educational programs regarding fire hazards, and techniques for reducing susceptibility to fire damage and identifying areas of low water pressure.

Program EHS-5.1.d Identify Areas with Insufficient Evacuation Opportunities. Continue to collaborate with Marin Fire Agencies in the identification and mapping of areas with only one point of ingress or egress and roads that do not meet current emergency access and evacuation standards and the preparation of a program that prioritizes corrective actions.

Program EHS-5.1.e Commit Funding for Evacuation Safety. Commit funding for projects identified by the Marin Fire Agencies, and, in particular, the Marin Wildfire Prevention Authority that enhance evacuation safety, spanning road improvement, signage, and notification systems.

Program EHS-5.1.f Monitoring State Requirements for Evacuation Routes. Track development of minimum standards for roads and evacuation routes and seek to adopt the standard. Apply any state standards for evacuation routes to new development.

Program EHS-4.m 5.1.g Continue to Use Technology to Promote Fire Safety. Continue to apply computer technology, such as Geographic Information Systems, vegetation inventory, evacuation planning and air movement modeling programs, to identify, analyze, and plan for potential fire hazards, including mapping and data analysis for conformance with evolving State standards. Notify affected parties of any relevant findings and make the information available to the public.

Program EHS-5.2.a Assess and Project Future Fire Protection Needs. Conduct an assessment of current fire protection capabilities and project the future needs for fire protection, considering future changes in housing, vegetation, access, and water supply. Ensure all communities in unincorporated Marin have adequate fire protection, emergency vehicle access, and adequate water supply for peak fire flow requirements.

Program EHS-5.2.b Consider Development Impacts to Fire Service. Consider additional impact or mitigation fees, or a benefit assessment, to offset the impact of new development on fire services.

Program EHS-5.2.c Describe Training Needs for Emergency Services. Work with the Office of Emergency Services, Marin County Fire Department, Marin County Sheriff, and other organizations to identify and describe goals and standards for emergency service training.

Program EHS-5.2d Continue to Improve Street Addressing. Continue to implement the program to improve and standardize the County street addressing system in order to reduce emergency service response times. Where applicable, coordinate the program with the cities.

Program EHS-5.3.a Continue to Revise Adopted Standards. Continue to adopt revisions to the International Fire and Building Codes, as amended by the State of California, and other standards which address fire safety adopted by the State of California. Review, revise, and/or adopt existing or new local codes, ordinances, and Fire Safe Standards to reflect contemporary fire safe practices.

Program EHS-4.n 5.3.b Evaluate-Regularly Update Development Standards. Request Fire Department review of County requirements for peak-load water supply and roadways (especially on hillsides) to determine whether those provisions need modification to meet evolving State standards, such as limiting narrow roads or one-way road use, grade/slope limits, minimum turning radius, and turnaround widths, to ensure adequate fire protection and suppression.

Program EHS-5.3c Require Rebuilding After a Disaster to Meet Current Standards. Develop requirements for rebuilding after a disaster so redevelopment meets all current state and local building wildfire protection building code requirements relevant to the particular fire hazard severity zone of the project.

Program EH-4.b 5.3.d Restrict Land Divisions. Prohibit land divisions in very high and high fire hazard areas unless the availability of adequate and reliable water for fire suppression is ~~demonstrated and guaranteed~~ provided; access for firefighting vehicles and equipment, as well as evacuation for residents, is provided from more than one point; necessary fire trails and fuel breaks are provided; structures are built consistent with the most current building code and fire code requirements for high fire hazard areas ~~fire-resistant materials are used exclusively in construction~~; and adequate clearances from structures and use of fire-resistant plants in any landscaping is required.

Program EHS-4.i 5.3.e Conduct Life Safety Assessments. Conduct a life safety assessment that considers the costs of fire safety maintenance prior to the County purchase of new land and facilities. Where feasible locate new essential public facilities outside of high fire risk areas, including hospitals and health care facilities, emergency shelters, emergency command centers and emergency communication facilities.

Program EHS-4.k 5.4.a Amended Urban Wildlands Urban Interface (WUI) Regulations. Work with Marin Fire Agencies ~~Marin fire departments~~ to prepare and adopt WUI regulations for new development and substantial remodels ~~in order~~ to reduce fire hazards in high and extreme fire hazard areas. Track and update standards as the areas of high and extreme fire hazards are re-defined.



Program ~~EHS-4.d~~ 5.4.b Review Applications for Fire Safety. Ensure new development meets all current building code and fire safety standards, including but not limited to ensuring the provision of an adequate water supply for fire suppression, providing sufficient road width for emergency vehicles and equipment, as well as evacuation for residents provided from more than one point. Require applicants to identify identification and maintenance of defensible space around structures, and that structures are built consistent with the most current build code and Cal Fire requirements for high fire hazard areas. ~~and compliance with fire safety standards, and e~~ Continue to work with local and State fire agencies to ensure that the California Fire Code (with local amendments), County Development Code, and State and local standards for construction are applied uniformly countywide.

Program ~~EHS-4e~~ 5.4.c Require Compliance with Fire Department Conditions. Continue to refer land development and building permit applications to the County Fire Department or local fire district for review, and incorporate their recommendations as conditions of approval as necessary to ensure public safety. Continue to require compliance with all provisions of the most recently adopted version of the California Fire Code (with local amendments).

Program ~~EHS-4.e~~ 5.4.d Require Sprinkler Systems. Continue to require installation of automatic fire sprinkler systems in all new structures and existing structures undergoing substantial remodeling, and provide incentives for sprinkler installation in all other habitable structures, especially those in high fire hazard areas.

Program ~~EHS-4.f~~ 5.4.e Require Fire-Resistant Roofing and Building Materials. Continue to require and provide incentives for Class A fire-resistant roofing for any new roof or replacement of more than 50% of an existing roof. Work with Marin County fire departments to prepare and adopt an ordinance requiring fire-resistant building materials in extreme and high fire hazard areas.

Program ~~EHS-5.4.f~~ Reduce Risk for Non-Conforming Development. For existing non-conforming development, the County should work with property owners to improve or mitigate access, water supply and fire flow, signing, and vegetation clearance to meet current State and/or locally adopted fire safety standards.

Program ~~EHS-4.h~~ 5.5.a Require Adequate Clearance Vegetation Removal. Require standards for clearance of vegetation on vacant lots, and around structures, and landscaped areas to ensure timely and adequate removal of potential fire fuel on both public and private property according to State requirements (Public Resource Code 4291) and local ordinances. ~~Require Adequate Clearance. Require standards for clearance of vegetation on vacant lots, and around structures, and landscaped areas to ensure timely and adequate removal of potential fire fuel on both public and private property.~~

Program ~~EHS-4.i~~ 5.5.b Use Varied Implement Ecologically Sound Methods of Vegetation Management to Provide Fuel Breaks and Fire Suppression. Work with the Marin Fire Agencies, other public agencies, utility districts, and private landowners to construct and maintain ecologically sound fuel breaks and manage vegetation along emergency access routes to facilitate effective fire suppression and evacuation.

Program ~~EHS-4.g~~ 5.5.c Develop and Maintain Fuel Breaks and Vegetation on Access Routes. Work with the Marin Fire Agencies, other public agencies, utility districts, and private landowners to construct and maintain ecologically sound fuel breaks and manage

vegetation along emergency access routes to facilitate effective fire suppression and evacuation.

Program EHS-5.5.d Require Fuel Reduction and Management Plans for New Developments. The County should require all new development projects with land classified as state responsibility areas (Public Resources Code Section 4102), land classified as high or very high fire hazard severity zones (HFHSZ or VHFHSZs; Section 51177), or within areas defined by local fire agencies as a “wildland urban interface” (WUI), to prepare a long-term comprehensive ecologically sensitive fuel reduction and management program, including provisions for multiple points of ingress and egress to improve evacuation and emergency response access and adequate water infrastructure for water supply and fire flow, and fire equipment access. (See Gov. Code, Section 66474.02.). The ecologically sensitive fuel reduction program should be consistent with MWPA’s ecological sensitive vegetation management guidelines, as well as federal, state, and County environmental and biological resource protection regulations. Where environmental sensitive resources or habitats could be impacted by vegetation removal, the property owner shall observe all regulations for the protection of habitat values.

Program EHS-6.1.f Disclose Current and Future Hazards. Develop a resale inspection permit program that provides disclosure of hazard risk information to prospective buyers prior to the sale of property. The program should include detailed hazard information, such as very high and high hazard wildfire severity zones, flood zones, tsunami and future sea level rise inundation areas, and Alquist-Priolo zones.

Program EHS-6.1.g Develop a Property Rating System. Based on the information in the resale inspection permit program, develop a property rating system available to the public for the purpose of evaluating risks from current and future hazards. Evaluation of hazards may be one function of a larger rating system or the sole function. The primary purpose of including hazards information is to inform prospective buyers and renters of the risks associated with a property prior to the commencement of any property sale, rental, or lease. Upon completion of the Property Rating System, make the information available to potential renters prior to completing a rental or lease agreement.

Program EHS-6.1.j Assess the Feasibility of Redevelopment. Encourage private property owners to evaluate redevelopment of sites subject to loss from destructive flooding or wave action. Consider actions the County could take to facilitate the relocation of development out of flood hazard areas and Very High Wildfire Severity Hazard Zones. Consider an acquisition and buyout program which includes acquiring land from the landowner(s) and restricting future development on the land. Engage communities on the topic of managed retreat and provide assistance to establish a supporting funding mechanism such as a community land trust or repetitive loss program or Geologic Hazard Abatement Districts. Consider use of sites repeatedly struck by climate hazards for flood-adapted restoration or recreational areas.

Program EHS-6.2.a Minimize Utility Service Interruptions. Work with utility companies to ensure that power lines serving the unincorporated areas are maintained to avoid power shutoffs, minimize damage during extreme events, and reduce the risk of wildfires.

Program EHS-6.2.c Broaden Communication Service and Minimize Communication Service Interruptions. Prepare an analysis of gaps in communication services within the County and identify measures for broadening coverage, especially where communication facilities are

needed to provide essential services. The analysis should include recommendations for new facilities locations, whether facilities can serve multiple functions, prioritization of facility locations that considers both the communication services and the environmental impacts and administrative burdens of such facilities. (Also see Implementing Program EHS-1.1b under Goal EHS-1).

### 20.3.3 Impacts and Mitigation Measures

The following analysis is provided at a programmatic level consistent with the level of detail of the proposed Project.

#### **Impact 20-1: Emergency Response and/or Emergency Evacuation Plan Impacts.**

[Threshold of Significance (a)] For the purposes of this EIR, the Project consists of amending the Marin County Countywide Plan (CWP) in the form of updated goals, policies, and implementing programs in the Housing and Safety Element Update.

Communities in Marin County require effective emergency response to protect residents and other community assets from the risk from wildfire. Emergency response in Marin County is guided by a number of programs, plans, and agreements, as detailed in Sections 20.1 (Setting) and 20.2 (Regulatory Setting), above. For example, as described in the technical memo accompanying the proposed Safety Element Update, “The Marin Operational Area Emergency Operations Plan 2014 addresses the planned response to extraordinary emergency situations associated with large-scale disasters affecting Marin County. The plan is based on the functions and principles of the California Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS), and the California Incident Command System (ICS). It identifies how the Marin County emergency operational system fits into the overall California and National risk-based, all-hazard emergency response and recovery operations plan. It serves as a planning reference and as a basis for effective response to any hazard that threatens Marin County including floods, fires, storms, landslides, droughts, sea level rise, and extreme temperatures.”

The Project, including the addition of housing proposed through the Housing Element Update, does not require changes to the Emergency Operations Plan. Continuing issues of concern to residents include: (1) limited egress (e.g., one way in and out) if a wildfire spreads into or near their community; (2) narrow, winding, and steep roads leading to and from residences; and (3) delays from traffic congestion during an evacuation.

As of the writing of this EIR chapter, Marin County has not adopted a countywide emergency evacuation plan. Chapter 4 of the Marin Fire Code addresses fire safety and evacuation plans for specific types of buildings, but not for a communitywide evacuation. Programs currently being implemented include those described in Sections 20.1 and 20.2, above, such as Fire Safe Marin, Ready Marin, ZoneHaven, and the Marin Operational Area (OA) Emergency Operations Plan (EOP).

Many proposed implementing programs included in the Safety Element Update are designed to create safe evacuation processes and outcomes. These proposed programs are listed below. Their full text is included in subsection 20.3.2 (Proposed Policies and Actions to Avoid or Reduce Significant Impacts).

- Program EHS-5.1.e Commit Funding for Evacuation Safety
- Program EHS-5.1.f Monitoring State Requirements for Evacuation Routes

- Program EHS-4.m 5.1.g Continue to Use Technology to Promote Fire Safety
- Policy EH-5.2 Ensure Adequate Fire Protection
- Program EHS-5.2d Continue to Improve Street Addressing
- Program EHS-4.n 5.3.b Evaluate Regularly Update Development Standards
- Program EH-4.b 5.3.d Restrict Land Divisions
- Program EHS-4.g 5.5.c Develop and Maintain Fuel Breaks and Vegetation on Access Routes
- Program EHS-5.5.d Require Fuel Reduction and Management Plans for New Developments
- Program EHS-1.1.e Assist with Physical Evacuation
- Program EHS-2.1.a Distribute Maps
- Program EHS-2.1.b Develop an Inclusive Public Outreach and Engagement Strategy
- Program EHS-2.3.f Encourage Road Improvements
- Program EHS-2.4.a Maintain and Improve Disaster and Emergency Response Notification System
- Policy EHS 2.4 Effective Emergency Access and Evacuation
- Policy EHS 2.5 Adequate Services
- Program EHS-2.4.b Adopt Proactive Preparedness
- Program EHS-2.4.c Identify and Improve Deficient Evacuation Routes
- Program EHS-2.4.d Create New Evacuation Routes
- Program EHS-2.4.e Ensure Access to New Development
- Program EHS-2.5.a Assess Critical Services Capacity
- Program EHS-2.5.b Explore Creation of New Evacuation Centers
- Program EHS-6.1.g Develop a Property Rating System.
- Program EHS-6.l.j Assess the Feasibility of Redevelopment
- Program EHS-6.2.a Minimize Utility Service Interruptions
- Program EHS-6.2.c Broaden Communication Service and Minimize Communication Service Interruptions

Construction of the development projects included within the Housing Element Update may temporarily impact traffic circulation conditions during construction periods. However, construction impacts on circulation would be temporary and would allow for evacuation in the event of an emergency, and emergency access would be maintained to development sites during construction.

Development included under the Housing Element Update would increase the population of the county, which in turn may exacerbate existing evacuation deficiencies by increasing the number

of vehicles utilizing evacuation routes. However, the Safety Element Update implementing programs listed above would reduce potential impacts because the programs would improve evacuation and emergency response compared to existing conditions. Further, the development projects included under the Housing Element Update have been sited such that new housing would not be located in areas that would interfere with emergency response or evacuation procedures and planning.

As a result of the proposed Safety Element Update implementing programs, ongoing countywide developments in evacuation planning, and the selection of housing sites in locations that would not impair emergency response or evacuation efforts, the Project would not impair emergency response or emergency evacuation plans; therefore, this impact would be ***less than significant***.

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**Impact 20-2: Wildfire-Related Pollutant Concentration Exposure Impacts.** [Threshold of Significance (b)] The County faces substantial wildfire threats due to its hilly terrain, dry weather conditions, and the nature of its vegetation coverage. At-risk areas are designated as Fire Hazard Severity Zones (FHSZs) per Government Code Sections 51175–51189. Figure 20-2 (Fire Hazard Severity Zones), above, illustrates these zones for Marin County.

Adopted regulations for developing housing in Marin County apply to the construction, alteration, and moving of buildings, in addition to repairs, operation of equipment, use and occupancy, means of egress, evacuation plans, location, maintenance, removal, and demolition of every building or structure or any appurtenances. The County has adopted the 2019 California Fire Code, 2018 International Fire Code, and 2018 International Wildland-Urban Interface Code, with amendments as described above in subsection 20.2.3, Regulatory Setting – Regional/Local. Marin County’s provisions reinforce State safety regulation with several specific requirements, as shown below.

- Section 4908 regulates the types of activities permitted within a Very High Fire Hazard Severity Zone (VHFHSZ).
- Chapter 33 addresses fire safety during construction and demolition, mandating fire safety procedures for the construction and demolition of structures (Section 3301-3317).
- Chapter 49 of the 2019 California Fire Code establishes minimum standards related to defensible space, requiring that property owners in a VHFHSZ manage vegetation within a 100-foot radius of a building.
- Section 503 specifies provisions pertaining to road standards for fire equipment access.
- Section 505 presents standards for signs identifying streets, roads, and buildings.
- Section 507 establishes minimum private water supply reserves for emergency fire use.
- Sections of the code refer to the State Public Resources Code for operation of power equipment (Sections 4427, 4428, 4431) intended to minimize risks in areas subject to wildfire.

In addition, Government Code Section 66474.02, which is part of the Subdivision Map Act, prohibits the subdivision of parcels in a VHFHSZ or State Responsibility Area (SRA) unless a city or county planning commission finds that: (1) the subdivision design and location are consistent with defensible space regulations in PRC Sections 4290 and 4291, (2) public fire protection services would be available for structures located throughout the subdivision, and (3) road designs meet standards for fire equipment ingress and egress per PRC Section 4290 and any local ordinance.

Current regulations, along with the proposed Safety Element Update policies and implementing programs, will continue to guide future housing development. These provisions will continue to regulate, for example, building design, access, firefighting water supply, and vegetation management, all to lessen the possible risk of ignition and spread of wildfires.

Generally, new housing in VHFHSZs and SRAs would not be likely to exacerbate wildfire risks. Human-caused fires have been negatively correlated with population density, meaning more developed areas are less likely to be affected by wildfires throughout the state and suggesting that additional development would not necessarily lead to more wildfire risk, especially where high-density housing is developed.

Many proposed implementing programs included in the Safety Element Update are aimed at minimizing potential ignitions and impacts from wildfire. These programs are listed below. Their full text is included in subsection 20.3.2 (Proposed Policies and Actions to Avoid or Reduce Significant Impacts).

- Program ~~EHS-4.15.1.b~~ Continue FIRE Safe Marin Program Wildfire Education
- Program ~~EHS-4.m~~ 5.1.g Continue to Use Technology to Promote Fire Safety
- Program EHS-5.2.a Assess and Project Future Fire Protection Needs
- Program EHS-5.2d Continue to Improve Street Addressing
- Program EHS-4.n 5.3.b ~~Evaluate~~ Regularly Update Development Standards
- Program EHS-5.3c Require Rebuilding After a Disaster to Meet Current Standards
- Program ~~EH-4.b~~ 5.3.d Restrict Land Divisions
- Program ~~EHS-4.f~~ 5.4.e Require Fire-Resistant Roofing and Building Materials
- Program EHS-5.4.f Reduce Risk for Non-Conforming Development
- Program ~~EHS-4.g~~ 5.5.c Develop and Maintain Fuel Breaks and Vegetation on Access Routes
- Program EHS-5.5.d Require Fuel Reduction and Management Plans for New Developments
- Program EHS-2.1.a Distribute Maps
- Program EHS-2.1.b Develop an Inclusive Public Outreach and Engagement Strategy
- Program EHS-2.2.a Improve Hazard Information
- Program EHS-2.3.d Support Community-Led Response and Neighborhood Preparedness

- Program EHS-2.3.e Provide and Support Emergency Preparedness Training
- Program EHS-2.3.f Encourage Road Improvements
- Policy EHS 2.4 Effective Emergency Access and Evacuation
- Program EHS-6.1.f Disclose Current and Future Hazards
- Program EHS-6.1.g Develop a Property Rating System
- Program EHS-6.1.i Assess the Feasibility of Redevelopment
- Program EHS-6.2.a Minimize Utility Service Interruptions

The proposed Safety Element Update policies and implementing programs require collaboration with fire departments operating within the County to provide adequate fire protection for existing and new development. In addition, the Housing Element Update inventory of sites has been selected to avoid hazardous areas, including areas subject to wildfire hazards. Compliance with existing Safety Element Update policies and implementing programs, existing Marin County Code, and State regulatory requirements described above and in subsections 20.2.2 and 20.2.3, and the applicable fire department development review process for new development, will help minimize the potential for impacts related to wildfires and subsequent downhill or downstream impacts, including exposure to air pollutants.

Therefore, the Project would not result in substantial adverse impacts due to slope, prevailing winds, and other factors, exacerbating wildfire risks, and thereby exposing project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. This impact would be ***less than significant***.

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**Impact 20-3: Impact from Needed Infrastructure Improvements.** [Threshold of Significance (c)] New housing developed on sites identified in the Housing Element Update would be constructed according to the fire protection requirements of Marin County and subject to review and approval by the County. Marin County enforces codes and regulations concerning new construction and remodeling through Fire Life Safety Plan Checks and Fire Life Safety Inspections. The Housing and Safety Element Update would facilitate the construction of residential housing which could require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may result in temporary or ongoing impacts to the environment but that are intended to reduce the risk of wildfire.

As described in this EIR chapter, notably in Sections 21.1 and 20.2, the regulations in effect throughout the State, along with the Marin Municipal Code, include minimum requirements for driveway widths, maximum grades, and minimum turning radii, as well as requirements for the creation and maintenance of wildfire buffers, sprinklers, and alarms, minimum fire flow requirements all of which reduce the risk of wildfire hazard but which may have temporary construction impacts or ongoing impacts on the environment.

Adoption of the Housing and Safety Element Update would not result in direct impacts to the environment from infrastructure improvements as the Project does not propose or authorize any specific development. Rather the Project facilitates the development of future housing projects. Each housing project would go through the County's review and approval process where new infrastructure needs would be identified, and potential environmental impacts assessed.

Compliance with adopted applicable regulations and proposed Safety Element Update implementing programs would ensure that the Project facilitate development that would result in a significant increase in fire risk through the installation or maintenance of associated infrastructure. Approval of the Project would update the CWP policies related to wildfire but would not require changes or modifications to other adopted regulations.

Many proposed implementing programs included in the Project are designed to minimize potential ignitions and impacts from wildfire, including the potential for infrastructure to exacerbate fire risk. The programs include prohibiting land divisions in hazardous areas, requiring fuel management plans for each development, and extending the use of existing infrastructure. The applicable Project programs are listed below. Their full text is included in subsection 20.3.2 (Proposed Policies and Actions to Avoid or Reduce Significant Impacts).

- Program EHS-5.2.b Consider Development Impacts to Fire Service
- Program EHS-5.3c Require Rebuilding After a Disaster to Meet Current Standards
- Program EH-4.b 5.3.d Restrict Land Divisions
- Program EHS-4.i 5.3.e Conduct Life Safety Assessments
- Program EHS-4.g 5.5.c Develop and Maintain Fuel Breaks and Vegetation on Access Routes
- Program EHS-5.5.d Require Fuel Reduction and Management Plans for New Developments
- Policy EHS 2.1 Enhance Public Awareness
- Policy EHS 2.2 Improve Information Base
- Policy EHS 2.3 Disaster Readiness
- Policy EHS 2.4 Effective Emergency Access and Evacuation
- Policy EHS 2.5 Adequate Services
- Program EHS-2.4.c Identify and Improve Deficient Evacuation Routes
- Program EHS-2.4.d Create New Evacuation Routes
- Program EHS-2.4.e Ensure Access to New Development
- Program EHS-2.5.b Explore Creation of New Evacuation Centers

As described above, development proposed under the Housing Element Update would be regulated in terms of location, design, building materials, and fuel modification/protection and would be subject to the proposed Safety Element Update policies and programs, which would reduce potential adverse impacts. The Project would not directly result in the construction or maintenance of infrastructure such as roads, fuel breaks, emergency water resources, powerlines, or other utilities that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. This impact would be ***less than significant***.



**Impact 20-4: Potential Post-Fire Impacts.** [Threshold of Significance (d)] Landslides and erosion are often associated with wildfires; however, most of the soils of Marin County are not the type prone to massive soil movement in post-fire conditions. However, some areas, such as those exposed by the 1997 Vision Fire, may be susceptible to soil movement and loss. Some areas of specific potential impact are concave topography where ground water converges, making these areas more prone to saturation. Other areas experience active landslides, where the exposure to rain and increased runoff could exacerbate the possibility of a post-fire landslide. Alluvial fans may fail with high rainfall intensity. In addition, wildfires kill vegetation and their roots, which hold soil in place. Decaying roots of trees pose a substantial decrease in the strength of soil to resist sliding.

Proposed Safety Element policies and an implementing program included in the Project are designed to minimize exposure of people and structures to post-fire risks. The programs range from maintaining an adequate level of preparedness to protecting development from geologic hazards by implementing stability report requirements. Chapter 9 (Geology and Soils) of this EIR provides further detail. The applicable Safety Element Update policies and programs that would avoid or reduce significant impacts are listed below. Their full text is included in subsection 20.3.2 (Proposed Policies and Actions to Avoid or Reduce Significant Impacts).

- Policy EHS 2.2 Improve Information Base
- Policy EHS 2.3 Disaster Readiness
- Program EH-23.3.b Protect Development from Increased Geologic Hazards

The proposed Safety Element Update policies and programs listed above and discussed in Chapter 9 (Geology and Soils) and Chapter 12 (Hydrology and Water Quality) of this EIR require existing and new development to be adequately protected from potential flooding or landslides and to not cause such hazards through careful site planning and construction. Further, the Safety Element Update includes proposed policies and implementing programs that would reduce the risk of the ignition and spread of wildfire in the County, thereby reducing the potential for post-fire impacts, including post-fire debris flow or landslides. Implementation of the proposed Safety Element Update policies and programs would ensure people or structures would not be exposed to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. This impact would be ***less than significant***.

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**Impact 20-5: Risk to People and/or Structures from Exposure to Wildfire.** [Threshold of Significance (e)] The Housing Element Update inventory of sites has been selected to avoid the most hazardous areas in the HFHSZs. In addition, all new development must comply with fire safety standards.

The proposed Safety Element Update policies and implementing programs would further reduce risks associated with the ignition and spread of wildfire. The proposed policies and implementing programs include wildfire risk reduction measures that range from, for example, community wildfire education efforts, fuel reduction requirements and guidance, creating adequate evacuation conditions, using land regulation to limit placement of residential units in hazardous areas, requiring fire-resistant building design, and increasing overall levels of

community preparedness. The applicable Safety Element Update policies and implementing programs that would reduce potential risk to people and structures from exposure to wildfire are listed below. Their full text is included in subsection 20.3.2 (Proposed Policies and Actions to Avoid or Reduce Significant Impacts).

- Program EHS-5.1a Collaborate with Marin Wildfire Protection Authority on Implementation of the Community Wildfire Protection Plan
- ~~Program EHS-4.15.1.b Continue FIRESafe Marin Program~~ Wildfire Education Program
- ~~Program EHS-4.a~~ 5.1.c Provide Information About Fire Hazards
- ~~Program EHS-4.m~~ 5.1.g Continue to Use Technology to Promote Fire Safety
- Program EHS-5.2.b Consider Development Impacts to Fire Service
- Program EHS-5.2.c Describe Training Needs for Emergency Services
- Program EHS-5.2d Continue to Improve Street Addressing
- ~~Policy EH-5.53~~ Regulate Land Uses to Protect from Wildland Fires
- Program EHS-5.3.a Continue to Revise Adopted Standards
- ~~Program EHS-4.n~~ 5.3.b Evaluate Regularly Update Development Standards
- Program EHS-5.3c Require Rebuilding After a Disaster to Meet Current Standards
- ~~Program EH-4.b~~ 5.3.d Restrict Land Divisions
- ~~Program EHS-4.i~~ 5.3.e Conduct Life Safety Assessments
- ~~Program EHS-4.f~~ 5.4.e Require Fire-Resistant Roofing and Building Materials
- ~~Program EHS-4.f~~ 5.4.f Reduce Risk for Non-Conforming Development
- ~~Policy EHS-5.25~~ Remove Hazardous Vegetation
- ~~Program EHS-4.h~~ 5.5.a Require Adequate Clearance Vegetation Removal
- ~~Program EHS-4.i~~ 5.5.b Use Varied Implement Ecologically Sound Methods of Vegetation Management to Provide Fuel Breaks and Fire Suppression
- ~~Program EHS-4.g~~ 5.5.c Develop and Maintain Fuel Breaks and Vegetation on Access Routes
- Program EHS-5.5.d Require Fuel Reduction and Management Plans for New Developments
- Program EHS-1.1.c Prevent Displacement of Vulnerable People
- Policy EHS 2.1 Enhance Public Awareness

- Program EHS-2.1.a Distribute Maps
- Program EHS-2.1.b Develop an Inclusive Public Outreach and Engagement Strategy
- Program EHS-2.2.a Improve Hazard Information
- Program EHS-2.3.d Support Community-Led Response and Neighborhood Preparedness
- Program EHS-2.3.e Provide and Support Emergency Preparedness Training
- Program EHS-2.3.f Encourage Road Improvements
- Program EHS-2.4.a Maintain and Improve Disaster and Emergency Response Notification System
- Policy EHS 2.2 Improve Information Base
- Policy EHS 2.3 Disaster Readiness
- Policy EHS 2.5 Adequate Services
- Program EHS-2.4.b Adopt Proactive Preparedness
- Program EHS-2.4.c Identify and Improve Deficient Evacuation Routes
- Program EHS-2.4.d Create New Evacuation Routes
- Program EHS-2.4.e Ensure Access to New Development
- Program EHS-2.5.b Explore Creation of New Evacuation Centers
- Program EHS-6.1.f Disclose Current and Future Hazards
- Program EHS-6.1.g Develop a Property Rating System.
- Program EHS-6.1.j Assess the Feasibility of Redevelopment
- Program EHS-6.2.a Minimize Utility Service Interruptions
- Program EHS-6.2.c Broaden Communication Service and Minimize Communication Service Interruptions

While the Housing Element Update would introduce new development that could potentially be impacted directly or indirectly by wildfire, the Housing Element Update inventory of sites was selected to avoid VHFHSZs as much as possible. Further, the proposed Safety Element Update policies and implementing programs listed above would help reduce the potential for wildfire ignition and spread and reduce risks to people and structures from wildfire. As discussed in Sections 20.a, 20.b, and 20.d, the proposed Safety Element Update policies and implementing programs would improve evacuation and emergency response, reduce the potential for wildfire ignitions and uncontrolled spread of wildfire, and reduce the potential for post-fire impacts (e.g., post-fire debris flow) to harm people or damage structures. Therefore, the Project would not

expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildfires. This impact would be ***less than significant***.

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### **Cumulative Wildfire Impacts**

The proposed Project could have a cumulative impact on the ability of local agencies to protect residents, workers, and structures from wildfires. Future development facilitated by the Housing Element Update could increase the population and/or increase activities and ignition sources and thereby increase the chances of a wildfire and the number of people and structures exposed to risk of loss, injury, or death. The potential cumulative impacts from individual projects in a specific area can also cause decline in fire service response and must be analyzed for each project.

The Safety Element Update contains policies and implementing programs that would help protect residents and structures from wildfires, as described above under Impacts 20-1 through 20-5. These policies and implementing programs promote public education and awareness prior to fires, require fire-resistant design and construction of buildings within high fire zones, call for identifying and improving deficient evacuation routes and creating new routes, support collaboration with Marin Wildfire Protection Authority on implementing the Marin County Community Wildfire Protection Plan, and help protect downhill properties from potential landslides, runoff, or pollution associated with wildfires. It is assumed the 11 neighboring incorporated cities and towns have similar General Plan policies and programs as they generally reflect compliance with State laws regarding wildfires and wildfire hazards.

The proposed Project along with other projects in the 11 neighboring incorporated cities and towns represent an incremental increase in potential fire service demand related to wildfire impacts. The *cumulative* impact results from a situation where response capabilities erode, and service levels decline. Fair-share development project contributions toward fire services provide capital that can be used toward firefighting and emergency response improvements; similarly, neighboring incorporated cities and towns have comparable funding arrangements to support their respective missions. Therefore, the Project, in combination with cumulative projects in the 11 neighboring incorporated cities and towns, would not result in a cumulatively considerable impact relative to wildfires. The cumulative impact would be ***less than significant***.

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## 21. OTHER CEQA AND SOCIAL-ECONOMIC ANALYSIS

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### 21.1 CUMULATIVE IMPACTS

#### 21.1.1 Approach

Section 15130(a) of the State CEQA Guidelines requires that the EIR "discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable...." The State CEQA Guidelines (Section 15355) define "cumulative impacts" as "...two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."

The quantitative cumulative growth recognized in this EIR is (1) the regional growth embedded in the Transportation Authority of Marin Demand Model (TAMDM), which is nested within the nine-county Bay Area Travel Model Two maintained by the Metropolitan Transportation Commission (MTC), plus (2) the development capacity assumptions for the Project. Item 1, the TAMDM, which is consistent with the MTC regional model and with land use and demographic data published by the Association of Bay Area Governments (ABAG), is the most reliable source of quantitative data because it is based on a 2040 land use forecast for the Regional Transportation Plan & Sustainable Communities Strategy. It includes the SMART commuter rail service and incorporates changes envisioned by long-range land use plans throughout the County, including the San Rafael General Plan adopted in 2021. Item 2 is described in Chapter 1 (Introduction), subsection 1.3.4 (Analysis Methodology) and further discussed in Chapter 3 (Project Description), subsection 3.4.2 (Housing Element Update) of this EIR. In addition, development projections based on state-mandated Regional Housing Needs Allocation (RHNA) numbers for the entire county total 14,405 units for 2023-2031, with 10,836 units for the 11 incorporated cities and towns in the county and 3,569 units for the unincorporated area.<sup>1</sup>

The analyses of quantitative cumulative impacts in this EIR are based on the "summary of projections" method, as authorized by Section 15130(b)(1)(B) of the State CEQA Guidelines.

#### 21.1.2 Summary of Cumulative Impacts

The following is a summary of cumulatively considerable Project contributions to significant cumulative impacts, and is based on the analysis of cumulative impacts in each of the EIR's topical impact chapters; in the case of analysis of vehicle miles traveled and greenhouse gas emissions and quantitative analysis of utilities (water supply, wastewater generation, and stormwater volumes), the impact analyses and conclusions are, by definition, cumulative because a Project impact would affect physical environmental conditions beyond the unincorporated county.

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<sup>1</sup>The largest city/town RHNA is for San Rafael, at 3,220 units. ABAG, Final Regional Housing Needs Allocation Plan: San Francisco Bay Area, 2023-2031, adopted December 2021, Updated March 2022, p. 26, [https://abag.ca.gov/sites/default/files/documents/2022-04/Final\\_RHNA\\_Methodology\\_Report\\_2023-2031\\_March2022\\_Update.pdf](https://abag.ca.gov/sites/default/files/documents/2022-04/Final_RHNA_Methodology_Report_2023-2031_March2022_Update.pdf), accessed 9/15/22.

**Aesthetics:** The Project would make a *cumulatively considerable contribution to significant cumulative impacts* with respect to Impact 4-1, “effects on scenic vistas,” and Impact 4-2, “impacts on existing visual character and quality.” These impacts would be ***significant and unavoidable***.

**Agricultural and Forestry Resources:** No cumulatively considerable contribution to a significant cumulative impact has been identified; no mitigation is required.

**Air Quality:** The Project would make a *cumulatively considerable contribution to significant cumulative impacts* with respect to Impact 6-1, “conflicts with the local air quality plan and result in a cumulatively considerable net increase in criteria pollutants for which the region is non-attainment” and Impact 6-2, “result in a cumulatively considerable net increase in criteria pollutants for which the region is non-attainment.” These impacts would be ***significant and unavoidable***.<sup>2</sup>

**Biological Resources:** No cumulatively considerable contribution to a significant cumulative impact has been identified; no mitigation is required.

**Cultural, Tribal Cultural, and Historic Resources:** The Project would make a *cumulatively considerable contribution to a significant cumulative impact* with respect to Impact 8-1, “destruction/degradation of historic resources.” This impact would be ***significant and unavoidable***.

**Geology and Soils:** No cumulatively considerable contribution to a significant cumulative impact has been identified; no mitigation is required.

**Greenhouse Gas Emissions and Energy:** The Project would make a *cumulatively considerable contribution to a significant cumulative impact* with respect to Impact 10-1, “generate significant greenhouse gas emissions and conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing greenhouse gas emissions.” This impact would be ***significant and unavoidable***.<sup>3</sup>

**Hazards and Hazardous Materials:** No cumulatively considerable contribution to a significant cumulative impact has been identified; no mitigation is required.

**Hydrology and Water Quality:** No cumulatively considerable contribution to a significant cumulative impact has been identified; no mitigation is required.

**Land Use and Planning:** No cumulatively considerable contribution to a significant cumulative impact has been identified; no mitigation is required.

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<sup>2</sup>The BAAQMD CEQA Guidelines explain that all regional air pollutant emission impacts are inherently cumulative impacts because they contribute to regional and global conditions, and are not confined to physical boundaries (see detailed discussion in Chapter 6, Air Quality).

<sup>3</sup>The BAAQMD CEQA Guidelines explain that all regional air pollutant emission impacts and climate change impacts are inherently cumulative impacts because they contribute to regional and global conditions, and are not confined to physical boundaries (see detailed discussion in Chapter 10, Greenhouse Gas Emissions and Energy).

**Mineral Resources:** No impacts have been identified; therefore, no cumulatively considerable contribution to a significant cumulative impact has been identified and no mitigation is required.

**Noise and Vibration:** The Project would make a *cumulatively considerable contribution to a significant cumulative impact* with respect to Impact 15-1, "substantial permanent increases in traffic noise levels." This impact would be **significant and unavoidable**.

**Population and Housing:** No cumulatively considerable contribution to a significant cumulative impact has been identified; no mitigation is required.

**Public Services and Recreation:** No cumulatively considerable contribution to a significant cumulative impact has been identified; no mitigation is required.

**Transportation:** The Project would make a *cumulatively considerable contribution to a significant cumulative impact* with respect to Impact 18-4, "impacts related to vehicle miles traveled." This impact would be **significant and unavoidable**.

**Utilities and Service Systems:** The Project would make a *cumulatively considerable contribution to significant cumulative impacts* with respect to Impacts 19-2a, 19-2b, and 19-2c, "project and cumulative water supply impacts," Impacts 19-3a and 19-3b, "wastewater treatment capacity impacts," and Impact 19-3c, "wastewater treatment capacity impacts outside of sanitary districts and community service districts providing sewage treatment." These impacts would be **significant and unavoidable**.

**Wildfire:** No cumulatively considerable contribution to a significant cumulative impact has been identified; no mitigation is required.

## 21.2 SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED

State CEQA Guidelines section 15126.2(c) requires that the EIR discuss "significant environmental effects which cannot be avoided if the proposed project is implemented." The impacts listed below are identified as significant and unavoidable for one of four reasons: (1) no potentially feasible mitigation has been identified; (2) potential mitigation has been identified but may be found by the Lead Agency to be infeasible; (3) with implementation of feasible mitigation, the impact still would not, or might not, be reduced to a less-than-significant level; or (4) implementation of the mitigation measure would require approval of another jurisdictional agency, whose approval will be pursued by the Lead Agency but cannot be guaranteed as of the publication of this EIR. Because these significant unavoidable impacts "cannot be alleviated without imposing an alternative design" (State CEQA Guidelines Section 15126.2[c]), Chapter 22, Alternatives to the Proposed Project, of this EIR evaluates a range of feasible alternatives that could lessen the identified significant unavoidable impacts, and evaluates the alternatives' ability to meet the Project objectives.

The following impacts have been identified in this EIR as significant and unavoidable:

- Impact 4-1: Effects on Scenic Vistas (project and cumulative)
- Impact 4-2: Impacts on Existing Visual Character and Quality (project and cumulative)
- Impact 6-1: Conflict with the Local Air Quality Plan and Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Operational) (project and cumulative)

- Impact 6-2: Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Construction) (project)
- Impact 6-3: Generate Toxic Air Contaminant Emissions that Expose Sensitive Receptors to Substantial Pollutant Concentrations During Construction (project and cumulative)
- Impact 8-1: Cultural Resources – Destruction/Degradation of Historic Resources (project and cumulative)
- Impact 10-1: Generate Significant Greenhouse Gas Emissions and Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purposes of Reducing Greenhouse Gas Emissions (project and cumulative)
- Impact 15-1: Substantial Permanent Increases in Traffic Noise Levels (project and cumulative)
- Impact 18-4: Transportation – Impacts Related to Vehicle Miles Traveled (project and cumulative)
- Impact 19-2a, 19-2b, 19-2c: Utilities – Project and Cumulative Water Supply Impacts (project and cumulative)
- Impact 19-3a, 19-3b: Utilities – Wastewater Treatment Capacity Impacts (project and cumulative)
- Impact 19-3c: Utilities – Wastewater Treatment Capacity Impacts Outside of Sanitary Districts and Community Service Districts Providing Sewage Treatment (project and cumulative)

The implications of each significant unavoidable impact identified above are described in the particular EIR chapter referenced with the impact. The Project is being proposed, notwithstanding these effects, to fully achieve the Project objectives described in subsection 3.3.3 of this EIR. If the County approves the Project (or an alternative to the proposed Project) that would result in significant unavoidable impacts, the County must (1) make a finding per State CEQA Guidelines Section 15091(a)(3) that specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible any mitigation measures or Project alternatives identified in the EIR that may avoid or substantially lessen the Project's significant unavoidable impacts, and (2) adopt a "Statement of Overriding Considerations" per State CEQA Guidelines Section 15093, describing why the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of the approved Project outweigh its significant unavoidable impacts.

### **21.3 GROWTH-INDUCING IMPACT**

State CEQA Guidelines Section 15126.2(e) requires that the EIR discuss "...the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment." Growth can be induced either by eliminating obstacles to growth or by stimulating economic activity within the region. Under CEQA, growth is not considered necessarily detrimental or beneficial.

Based on Government Code Section 65300, the CWP is required to serve as a comprehensive, long-term plan for the physical development of Marin County and, by definition, intends to provide for and address future growth in the unincorporated portions of the county. As part of its general plan, every city and county are required to adopt a housing element, as required by



Government Code Section 65302(c), and a safety element, as required by Government Code Section 65302(g). Even though the Housing Element Update does not propose any specific development projects, it would still have growth-inducing impacts because one of the goals of the Housing Element Update is to provide for up to 5,214 new housing units in the county (3,569 in compliance with the RHNA and a buffer of 15 to 16 percent for lower income and moderate income housing, for an overall total buffer of 10 percent). The Safety Element Update similarly does not propose any specific development projects but through its programs would construct road improvements, create new evacuation routes and improve deficient routes, and otherwise enhance access provisions in support of the future potential housing facilitated by the Housing Element Update.

No substantial, detrimental, growth-inducing effect is expected. Any road extension or infrastructure would be of a scale commensurate to the needs of the new development and would not be “oversized” in a way that would lead to substantial indirect growth. Road work and infrastructure would be designed to facilitate the development envisioned in the Housing Element Update efficiently and effectively, and to meet the safety objectives stated in the Safety Element Update, consistent with State Planning and Zoning Law. The goals, policies, and programs in the Housing Element Update and Safety Element Update are designed to provide the framework for this future growth, one of the primary goals of which is to meet identified housing needs in the unincorporated area of Marin County. No other future potential development is being contemplated in the Housing Element Update and Safety Element Update. They are purposely designed to meet the County’s RHNA, with goals, policies, and programs to manage this growth in ways that protect the environment and quality of life in Marin County.

As explained in Chapter 3, Project Description, the Project is being proposed to encourage housing development in areas of the County that have been determined suitable for this additional development.

#### **21.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES**

State CEQA Guidelines Section 15126.2(d) requires that the EIR discuss any significant irreversible environmental changes that would be caused by the Project. Specifically, Section 15126.2(d) states:

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Nonrenewable resources, in this discussion, refer to the physical features of the natural environment, such as land, air, and waterways.

Changes in land use designations and/or zoning proposed by the Housing Element Update would result in commitment of these areas to the designated uses for the foreseeable future. However, as discussed in Chapter 13, Land Use and Planning, the proposed amendments would enable the County to meet its mandated RHNA while avoiding physically dividing an established community and while complying with applicable State, regional, and local plans and programs.

Irreversible changes could occur due to future excavation, grading, and construction activities associated with uses permitted by the Project. Although these changes can generally be addressed by mitigation measures, the potential for disturbance would represent an irreversible change. The Project would also increase densities and introduce development on some sites that are either vacant or underutilized, which would be irreversible.

The incremental increases in population from future development facilitated by the Project would result in an increase in vehicle miles travelled (VMT) and thus increased emissions of air pollutants and greenhouse gases and increased generation of noise, as discussed in EIR Chapter 6, Air Quality; Chapter 10, Greenhouse Gas Emissions and Energy; and Chapter 15, Noise, respectively.

Other irreversible changes associated with Project would be the future use of nonrenewable resources during construction, including petroleum products and consumption of energy and water post-construction. However, because potential future development facilitated by the Project would be required by law to comply with California Code of Regulations Title 24 (including updates over time) and adopted County green building requirements, implementation of the Project would not be expected to use energy in a wasteful, inefficient, or unnecessary manner (also see Chapter 10, Greenhouse Gas Emissions and Energy).

In addition, though potential future development facilitated by the Project could impact biological and agricultural resources, the EIR includes mitigation measures to minimize the effects on biological resources, and CWP policies and programs support protection of agricultural land.

The consumption or destruction of other nonrenewable or slowly renewable resources would also result during construction, occupancy, and use of individual development sites under the Project. These resources would include, but would not be limited to, lumber, concrete, sand, gravel, asphalt, masonry, metals, glass, plastic, and water. Implementation of the Project would also irreversibly use water and solid waste landfill resources. However, future development facilitated by the Project would not consume any of those resources wastefully, inefficiently, or unnecessarily, especially considering ongoing County conservation and recycling programs.

## **21.5 SOCIAL AND ECONOMIC EFFECTS**

Although a discussion of social and economic effects is not required by CEQA, the following is being provided for informational purposes. According to the State CEQA Guidelines, "Economic or social information may be included in an EIR or may be presented in whatever form the agency desires."<sup>4</sup> This section provides economic and social information related to the Housing and Safety Element Updates. As stated in State CEQA Guidelines Section 15131:

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<sup>4</sup>State CEQA Guidelines Section 15131.

- (a) Economic or social effects of a project are not to be treated as significant effects on the environment.
- (b) Economic or social effects of a project may be used to determine the significance of physical changes caused by the project.
- (c) Economic, social, and housing factors will be considered by the agency, together with technological and environmental factors, in deciding whether changes in the Project are feasible to reduce or avoid the significant effects on the environment identified in the EIR.

### 21.5.1 Social and Economic Issues

The policies, programs, and physical improvements that will result from updating the Housing and Safety Elements will result in potentially significant environmental impacts and have the potential to improve or worsen social and economic issues.

- 1) Housing: Living in decent, affordable, and reasonably located housing is one of the most important determinants of well-being. More than just basic shelter, housing affects lives in important ways, determining access to work, education, health care, recreation, healthy foods, and shopping. The cost and availability of housing also affects the ability of employers to hire and retain qualified workers.
- 2) Safety: Many populations in Marin County are vulnerable to one or more hazards. The intensity of effects will vary depending on the individual's proximity to the hazard, available financial resources, and mobility, health, or dependency on other individuals or services. Common factors that contribute to vulnerability of people and communities include existing inequities, exclusion, or institutionalized racism; poor environmental conditions, lack of access to services, or poor living conditions; individual or surrounding physical states or conditions that increase vulnerability; and lack of investment opportunities. Resilience requires community capacity to plan for, respond to, and recover from stressors and shocks that may include:
  - Drought
  - Extreme Heat
  - Landslides
  - Subsidence
  - Flooding
  - Sea Level Rise
  - Severe Weather
  - Tsunami
  - Wildfire

### 21.5.2 Policy Framework

In the Socioeconomic Element of the Countywide Plan (CWP), the expressed vision (p. 4.3-1) for a 21st century Marin County will include affordable choices for housing with high-quality education and services available to people of all ages, cultures, and income levels. Support systems will be in place to help those in need, and families will live, work, and play in a safe and

healthy environment. More specifically, the Socioeconomic Element of the CWP (p. 4.4-2) notes that:

- It is difficult for businesses to locate and stay in Marin County due, in part, to the high cost of housing which requires companies in Marin to pay higher wages than they might elsewhere. Reasons for businesses leaving include high rents, difficulty in recruiting and retaining employees due to the high cost of housing and long commute times, and increased cost of transporting goods along the often-congested City-Centered Corridor.
- Almost half of the employees in the county work in the service and retail sectors, and jobs are becoming more concentrated there. The ratio of jobs per household (more than 1.2 in 2000) is expected to increase, largely because housing costs require more than one income to support a household.
- The County must be proactive in ensuring that both local-serving and broader-based businesses thrive. Though outdated, the CWP identifies industries (refer to CWP Figure 4-2), that present growth opportunities that can help address the key economic development issues facing Marin County: the need to more closely link jobs with housing, traffic congestion, land use constraints, and social inequity.

The Socioeconomic Element of the CWP goes on to establish Goals, Policies, and Programs to address 11 issues. As it relates to the Housing and Safety Elements Update, the key issues relate to the economy, public safety, diversity, environmental justice, and public health.

### **21.5.3 Marin County Composition and Housing Profiles**

Of the 262,321 people that live in Marin County, 66,888 are residents of unincorporated Marin County and collectively reflect the following statistics:

- Median Age: 47 years
- Seniors: 22%
- Singles living alone: 27% of residents
- Families: 66% of households
- 8% of ownership homes contain large households (over 5 people)
- 3% of rented homes contain large households (over 5 people)
- People with disabilities: 9% of residents
- Unhoused individuals: 172 people

Detached single-unit homes are the predominant type of housing in the unincorporated areas of the county:

- 76.8% Detached Single-Unit Homes
- 6.4% Attached Single-Unit Homes
- 4.8% Multi-Unit Homes (2 – 4 units)
- 10% Multi-Unit Homes (5 units or more)
- 2% Mobile Homes

Table 21-1 identifies the state income thresholds for affordable housing in Marin County for 1 through 4 person households.

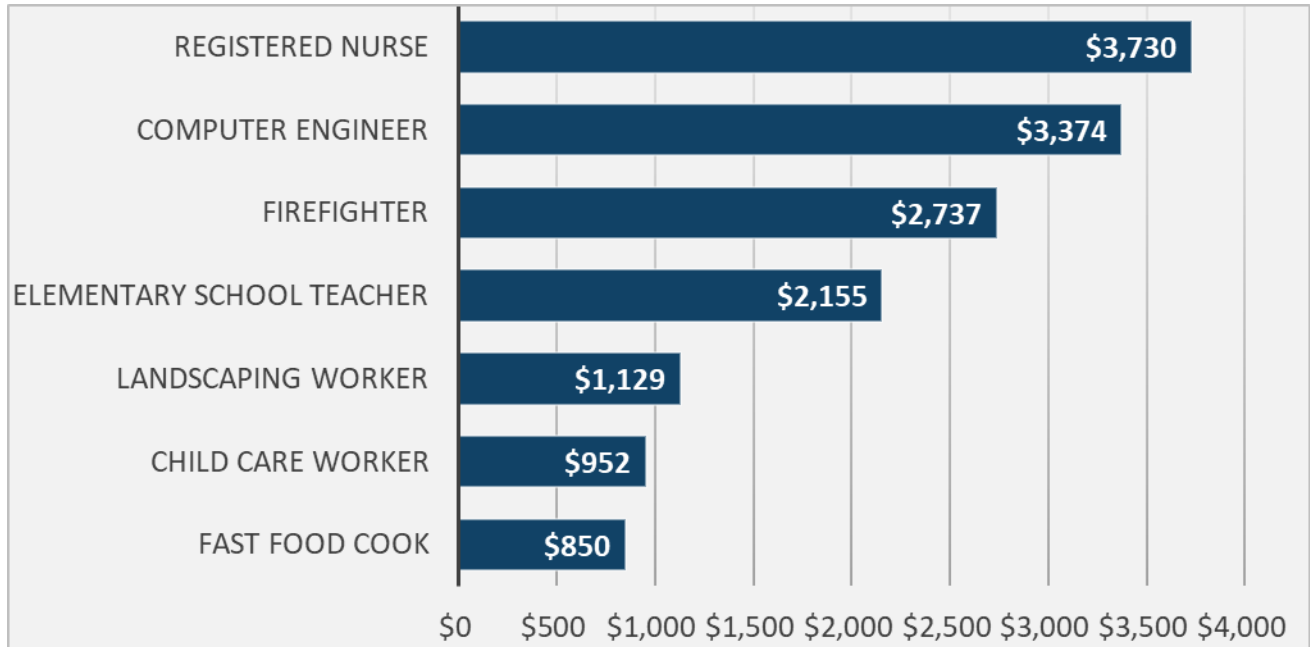
**Table 21-1:  
State Income Thresholds**

<b>Income Level</b>	<b>1-Person</b>	<b>2-Person</b>	<b>3-Person</b>	<b>4-Person</b>
<b>Extremely Low</b> 0-30% AMI	\$38,400	\$43,850	\$49,350	\$54,800
<b>Very Low</b> 31-50% AMI	\$63,950	\$73,100	\$82,250	\$91,350
<b>Low</b> 51-80% AMI	\$102,450	\$117,100	\$131,750	\$146,350
<b>Moderate</b> 81-120% AMI	\$125,650	\$143,600	\$161,550	\$179,500
Area Median Income	\$104,700	\$119,700	\$134,650	\$149,600

Source: CA HCD 2021 Income Limits

With a median rent of \$3,268, a wide range of wages for most of the jobs identified in Table 21-2 are not adequate to afford home rental rates in Marin. The monthly income needed for a median priced home mortgage (\$7,900) is out of range for all jobs identified in Table 21-1.

**Table 21-2: Wages in Marin County<sup>5</sup>**



As shown in Table 21-3 the Association of Bay Area Governments (ABAG) has allocated 3,569 residential units across four income groups to Marin County’s share of the regional housing need.

<b>Table 21-3: Regional Housing Needs Allocation by Income Group</b>			
<b>Income Group</b>	<b>% of AMI</b>	<b>Unincorporated Marin County</b>	<b>% Of Units</b>
		<b>2023- 2031 RHNA</b>	
Very Low	<50%	1,100	31%
Low	50-80%	634	18%
Moderate	80-120%	512	14%
Above Moderate	120% +	1,323	37%
<b>Total</b>		<b>3,569</b>	

Source: ABAG, 2021

<sup>5</sup>Source: U.S. Labor Bureau of Labor Statistics (2020), Zillow (2017)

#### 21.5.4 Social and Economic Effects to Consider

A. Housing Element Update. The Housing Element Update identifies sites that may be developed with 3,569 residences to satisfy the Marin County Regional Housing Needs Allocation (RHNA). As discussed in various chapters of this EIR, development of these homes will result in potentially significant impacts to many of the environmental factors addressed in this EIR. In some instances, the County will need to balance economic, social, and other benefits against such environmental impacts.

In accommodating housing to meet the RHNA, the County will improve the jobs housing balance and create greater opportunities for lower income households to work and live in Marin County. The Housing Element Update includes goals, policies, and programs that address special needs groups, promote affordable housing, preserve existing housing, combat discrimination, protect tenants, and affirmatively further fair housing.

The Housing Element Update provides a framework for the County to increase the supply of housing in several broad categories:

- **Lower Income Households:** Providing housing for low- and very-low-income households who don't generate adequate income to fund construction and maintenance of safe, habitable housing.
- **Workforce Housing:** Housing near employment opportunities in Marin County that is also affordable to people working in such job centers.
- As Marin County has experienced increasing housing costs, people working in Marin County have had to seek more affordable housing options further away from their jobs. This has resulted in longer commutes and quality of life issues. The Housing Element Update seeks to provide housing that is affordable to a range of households, to increase housing opportunities for people working in Marin County, and to reduce vehicle miles traveled (VMT).
- **Special Needs Housing:** Where the housing market does not provide a natural response to housing requirements (e.g., Agricultural Worker Housing, the disabled) the County seeks to identify programs to address the need.

The Housing Element Update also includes goals, policies, and programs designed to ensure affordable housing is built and existing housing is preserved; promote diverse housing types to increase housing choices; promote participation that is inclusive and includes traditionally underrepresented populations; and remove barriers to housing to promote fair housing choice and opportunity for all Marin County workers and residents.

B. Safety Element Update. The Safety Element Update promulgates goals, policies, and programs related to geologic hazards, flooding, wildfire, and resilience to climate change (e.g., drought, heat). In particular, the Safety Element Update promotes installation of adequate infrastructure (e.g., water, sewer, and roads) to protect the health, safety, and welfare of Marin County communities. In particular, the Safety Element Update seeks to ensure adequate access and evacuation routes for new and existing development. Such improvements will result in potentially significant environmental impacts due to grading, excavation, vegetation removal, and habitat disturbance resulting from construction, wider roads to provide passing lanes, turn outs, and turnarounds as needed to meet safe road standards, and more roads to provide a second means of access or egress.

In addition to infrastructure improvements to address hazards, the Safety Element Update also includes overarching goals, policies, and programs related to equitable community safety and improving awareness and readiness for all populations in Marin County. Specifically, the Safety Element Update also includes goals, policies, and programs designed to ensure an equitable response to climate resilience and community safety; involve vulnerable populations – such as individuals and communities with limited economic capacity, mobility challenges, and linguistic barriers to communication – that experience bias due to ethnic and racial characteristics; prevent post-disaster displacement and provide direct financial and physical assistance to address preparedness, evacuation, and recovery challenges; ensure inclusive communication to enhance community awareness; and ensure that disaster and emergency notifications and evacuation are designed to close gaps in the ability of all residents to receive disaster and emergency notifications and support.

### **21.5.5 Conclusions**

When considering the technological and environmental factors that inform decision-making related to potential environmental impacts, it is important that economic, social, and housing factors be considered by the County of Marin when deciding whether a project is feasible. The EIR may trace the causal connection between the effect of a proposed decision on a project, through anticipated economic or social changes resulting from the project, to physical changes caused in turn by the economic or social changes. The proposed updates to the Housing and Safety Elements will:

- Remove noneconomic barriers to housing, such as race, ethnicity, gender, and disability status.
- Increase opportunities for people working in Marin County to live in the county, thereby reducing average VMT per driver.
- Improve access to housing and emergency services for vulnerable and underrepresented populations.
- Ensure that lower income households will have comparable access to high amenity (e.g., good schools, parks and open space, clean air) neighborhoods to affirmatively further fair housing.
- Increase access to shelters for homeless individuals and families.
- Mitigate adverse health effects related to living in substandard or overcrowded housing or housing near sources of pollution.
- Install adequate infrastructure (e.g., water and roads) to protect the health, safety, and welfare of Marin County communities.
- Provide adequate access and evacuation routes for new and existing development.
- Ensure an equitable response to climate resilience and community safety that involves vulnerable populations (e.g., individuals and communities with limited incomes, mobility challenges, linguistic barriers to communication).
- Address bias due to ethnic and racial characteristics to prevent post-disaster displacement.
- Provide direct financial and physical assistance to address preparedness, evacuation, and recovery challenges.



- Ensure that disaster and emergency notifications and evacuation are designed to close gaps in the ability of all residents to receive disaster and emergency notifications and support.

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## 22. ALTERNATIVES TO THE PROPOSED PROJECT

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Section 15126.6(a) of the State CEQA Guidelines requires an EIR to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible".

Section 15126.6(b) states that "the discussion of alternatives shall focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if those alternatives would impede to some degree the attainment of the basic project objectives, or would be more costly."

Consistent with Section 15126.6, the Alternatives Chapter describes three alternatives to the proposed Housing and Safety Elements Update project and compares their impacts and ability to meet project objectives to those of the proposed Project. Pursuant to Section 15126.6(e)(2) of the State CEQA Guidelines, the "environmentally superior" alternative among the three is identified. The project alternatives evaluated in this Chapter are:

- Alternative 1: No Project
- Alternative 2: Reduced VMT
- Alternative 3: Reduced Utility Impacts Alternative (Water & Wastewater)

This Chapter analyzes the ability of the proposed alternatives to avoid or substantially reduce significant unavoidable impacts and lessen other significant impacts of the proposed project.

### **Significant Unavoidable Project Impacts**

This EIR has identified the following ***significant unavoidable impacts*** that could result from the Housing and Safety Element Update Project:

- **Aesthetics**: Impact 4-1: Effects on Scenic Vistas, and Impact 4-2: Impacts on Existing Visual Character and Quality. Potential housing facilitated by the Housing Element Update could substantially adversely affect a scenic vista and visual character of the site due to changes in densities and building heights that could potentially obscure or degrade scenic vistas and substantially adversely affect a scenic vista. *These impacts were found to be significant and unavoidable with no feasible mitigation.*
- **Air Quality**: Impact 6-1: Conflict with the Local Air Quality Plan and Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Operational), Impact 6-2: Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Construction),

## 22. Alternatives to the Proposed Project

and Impact 6-3: Generate Toxic Air Contaminant Emissions that Expose Sensitive Receptors to Substantial Pollutant Concentrations During Construction. The air quality analysis found that growth proposed under the Project would result in a projected increase in vehicle miles traveled (VMT) that exceeds the projected population increase and, therefore, could conflict with the BAAQMD 2017 Clean Air Plan, and result in a cumulatively considerable net increase in operational criteria air pollutants for which the region is non-attainment. Mitigation measures 6-1 Implement Mitigation Measure 18-4 (Transportation), 6-2 and 6-3 Evaluate Air Quality Impacts of Proposed Projects and Plans, are identified, but the impacts would remain significant and unavoidable. *Although future development projects would be required to comply with Mitigation Measures 6-1, 6-2, and 6-3, it cannot be definitively known or stated at this time that all development projects occurring under implementation of the Housing Element Update would be able to reduce VMT growth to a rate that is below the rate of population growth and reduce potential criteria air pollutant emissions and TAC emission to levels that are below BAAQMD thresholds. Therefore, despite the implementation of the recommended mitigation measures, the Project was found to have significant and unavoidable air quality impacts*

- Cultural Resources: Impact 8-1: Destruction/Degradation of Historic Resources. There may be one or more properties or features within the Planning Area, now or in the future, that meet the State CEQA Guidelines definition of a historic resource, including properties or features eligible for listing in a local, State, or Federal register of historic resources. Implementation of Mitigation Measure 8-1 measures (a) (b), (c), (d), (e), and/or (f) would reduce a significant impact on historic resources, but not to a less-than-significant level. *Without knowing the characteristics of the potentially affected historic resource or of the future individual development proposal, the County cannot determine with certainty that Mitigation Measure 8-1 (a) or (b) would be considered feasible (complete avoidance of historic resource), and measures (c), (d), (e), and/or (f) may not reduce the impact to less than significant. Consequently, this impact is considered significant and unavoidable.*
- Transportation: Impact 18-4: Impacts Related to Vehicle Miles Traveled. There is uncertainty about the ability of development projects on candidate sites to achieve the required VMT reductions – particularly sites in suburban and rural locations where new or more frequent transit service is not planned or funded and very few VMT reduction strategies would be likely to be sufficiently effective. Mitigation Measure 18-4 is recommended requiring future residential development projects to achieve a VMT rate that is 15 percent below the regional average residential VMT per capita and identifying VMT reduction techniques that can be incorporated into individual projects. *Given the inability to assure that residential VMT per capita can be reduced below significance thresholds despite required VMT reduction strategies, this impact would be significant and unavoidable.*
- Utilities – Water: Impact 19-2a, 19-2b, 19-2c: Project and Cumulative Water Supply Impacts: Water service providers and individual wells and water supply systems have water supplies dependent upon water sourced from reservoirs, local wells, streams, and purchased water from the Russian River in Sonoma County. Under drought conditions,

water from some of these sources has decreased to levels such that some water service providers have imposed restrictions for existing customers and/or moratoriums on new connections. Some water service providers do not have sufficient water supplies available to serve the Project or cumulative development during normal, dry, and multiple dry years. The County would implement multiple policies and programs to assist water providers in locating new water sources, but policy and program implementation may not result in the identification of new water sources during the planning life of the housing element, thus the impact is considered significant and unavoidable. *Due to the uncertainty associated with drought impacts on water supply and uncertainty of timing and fruition of efforts of the water services providers to supplement water supplies in dry and multiple dry years, water supply impacts resulting from the Project and cumulative scenarios would be significant and unavoidable for these water providers with no feasible mitigation.*

- Utilities – Wastewater: Impact 19-3a, 19-3b: Wastewater Treatment Capacity Impacts: Parts of the Unincorporated County are served by small community service districts and sanitary districts which are in need of infrastructure upgrades and expansion in order to collect and treat wastewater from new development. Possible multiple new connections discharging an increased amount of waste to existing infrastructure and facilities can overwhelm the system's capacity for conveyance and treatment, which would be a potentially significant impact. Service districts with restricted treatment capacity are Bolinas Community Public Utility District and Tomales Village Community Services District, which would not have capacity to treat sewage flows under the Project and cumulative development scenarios (see Tables 19-9 and 19-10). The County would implement multiple policies and programs to assist wastewater treatment providers in system upgrades to serve new housing development, but policy and program implementation may not result in increased treatment capacity during the planning life of the Housing Element. The expansion of treatment capacity is considered infeasible within the timeframe of the Housing Element Update Project or cumulative scenarios due to a combination of factors, including coordinating community support, obtaining funding, executing the associated planning studies and investigations, coordinating with jurisdictional agencies, project design and review, and construction. *Wastewater treatment capacity impacts for the Project and cumulative scenarios would be significant and unavoidable with no feasible mitigation.*
- Utilities – Wastewater: Impact 19-3c: – Wastewater Treatment Capacity Impacts Outside of Sanitary Districts and Community Service Districts Providing Sewage Treatment: Parts of the unincorporated County are served by private on-site septic systems. The potential for an individual septic system to have sufficient capacity to serve a development's demand depends on the specific soil conditions and existence of natural and built features within the parcel proposed for development. Until site-specific investigations are completed, uncertainty exists on any given parcel regarding the capacity of the existing soil to treat wastewater from a proposed development. *Due to the uncertainty in the ability of a given parcel to accommodate a proposed development's wastewater treatment needs, and in the results of future investigations to identify alternative approaches to sewage disposal, Project and cumulative impacts*

*resulting from septic systems are considered significant and unavoidable with no feasible mitigation.*

## **22.1 PROJECT OBJECTIVES**

In accordance with State CEQA Guidelines Section 15126.6(a), this EIR does not evaluate every conceivable alternative. A feasible range of alternatives that will allow decision-makers to make a reasoned choice and that meet most of the Project objectives has been evaluated.

The Project goals and objectives presented in the Project Description (Section 3.3 Project Objectives) were developed consistent with State CEQA Guidelines Section 15124[b]. They are listed below for the Housing Element Update and the Safety Element Update.

### **22.1.1 Housing Element Update Project Objectives**

A. New Housing. Facilitate new housing growth throughout the unincorporated County area in response to the region's need for more affordable and market rate housing, as well as develop housing solutions to meet the County's new Regional Housing Needs Allocation (RHNA).

B. Housing Choice. Meet Housing Needs through a Variety of Housing Choices. Respond to the broad range of housing needs in Marin County by supporting a mix of housing types, densities, affordability levels, and designs.

C. Healthy Neighborhoods. Promote healthy neighborhoods that incorporate best practices related to land use, racial equity, mobility, housing, affordability, safety, environmental justice, community services, and design.

D. Equity. Combat housing discrimination, eliminate racial bias, undo historic patterns of segregation, and lift barriers that restrict access in order to foster inclusive communities and achieve racial equity. Identify communities most vulnerable to climate change impacts and establish new goals, policies, and programs for equitable public safety, emergency preparedness, response and recovery.

E. Inclusivity. Engage residents and stakeholders to ensure equitable and inclusive processes, policies, investments, and service systems.

F. Technology. Embrace technology and innovative practices to create smart, sustainable communities and adaptable infrastructure systems.

### **22.1.2 Safety Element Update Project Objectives**

A. Safety. Establish new CWP goals, policies, and programs to include climate change adaptation and resiliency planning, sea level rise, and additional wildfire measures, and provide direction to improve emergency preparedness, response, and recovery.

B. Adaptive and Resilient Communities. Develop strategies that help people, infrastructure, and community assets adapt to and recover from evolving climate threats and vulnerabilities, and from natural and human-caused hazards.

C. Conformance with Regulatory Requirements. Develop a Safety Element that meets all the requirements under Government Code Section 65302(g), and which reflects State and local regulations for specific hazards, with the intent of protecting people and key infrastructure from damage resulting from an environmental hazard.

## 22.2 ALTERNATIVES CONSIDERED BUT REJECTED

Section 15126.6(c) of the State CEQA Guidelines states, “Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental effects.”

State CEQA Guidelines Section 15126.6(f) states that the Lead Agency should consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and the proponent’s control over alternative sites in determining the range of alternatives to be evaluated in an EIR.

With respect to alternative locations, State CEQA Guidelines Section 15126.6(f)(2)(A) states that alternative locations need not be evaluated in every case. The key question in determining whether to evaluate alternative locations is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location. Only locations that would avoid or substantially lessen any significant effects need be evaluated in the EIR. State CEQA Guidelines Section 15126(f)(3) states that alternatives that are remote or speculative, or the effects of which cannot be reasonably predicted, need not be considered.

The following alternatives were considered for evaluation but were rejected due to infeasibility:

- Avoidance of Environmental Hazards (Housing Element Update)
- Alternative Project Locations
- Reduced Size Project (Housing Element Update)

**Avoidance of Environmental Hazards (Housing Element Update).** This potential alternative to the proposed Project would remove housing sites that are located within identified and mapped hazard areas such as geologic, flood, or wildfire hazard areas, and areas impacted by future sea level rise, with the goal of protecting people and structures from the potential impacts of the identified hazard. The Safety Element component of the Project discusses the environmental hazards present in the County which could result in the exposure of people or structures to impacts from those hazards.

This alternative was rejected for the following reasons:

1. The County undertook a rigorous housing site selection process, considering many factors in identifying suitable sites in the Housing Element, including whether the site could be significantly impacted by the environmental hazards addressed in the Safety Element. In identifying housing sites, the Project avoided sites that presented significant environmental hazards to future residents or structures and that would be too costly to

develop. Thus, the proposed Project excludes certain sites because of environmental hazards. However, the Housing Element does place housing sites in identified environmental hazard areas that were considered appropriate for development provided the individual projects comply with all relevant codes and regulations. Consequently, this alternative would not increase protection for people or property beyond the protections the proposed Project provides.

2. The Project includes goals, policies, and implementation programs that would mitigate environmental hazards and protect the public and infrastructure from environmental hazards. Safety Element Update requirements, the County Development Code requirements, adopted plans and policies, and the development review process would ensure new housing is designed to be resistant to potential environmental hazards. The EIR does not identify any significant environmental impacts to the proposed housing from environmental hazards addressed in the Safety Element; thus, this alternative would fail to reduce any significant impacts identified in the EIR.

3. Much of the unincorporated county area falls within one or more identified environmental hazard zones. For example, Marin County has 23 communities listed on CAL FIRE's Community at Risk list, with approximately 80% of the total land area in the county designated as having moderate to very high fire hazard severity ratings. Based on 2018-2019 tax assessor parcel data, there are approximately 69,400 living units, valued at \$58.5 billion, within the wildland urban interface WUI (CWPP 2020) areas that experience elevated fire risk. Figures in EIR Chapter 9 Geology and Soils, Chapter 12 Hydrology, and Chapter 20 Wildfire show the location and extent of potential geologic hazards, flooding and sea level rise, and wildfire hazard severity zones.

Therefore, an Avoidance of Environmental Hazards Alternative was rejected because it would not protect people or property from environmental hazards beyond what the proposed Project would do, it does not reduce any significant impact resulting from exposure to environmental hazards identified in the EIR, and it would not allow the County to meet its RHNA requirement, which is an essential project objective.

**Alternative Project Locations.** The proposed Housing and Safety Element Updates Project involves updating the relevant elements of the 2007 Countywide Plan (CWP) to meet current State requirements for all unincorporated Marin County lands. An alternative location for the proposed Project would not be feasible because the Project is to plan for housing and minimize environmental hazards within the unincorporated county area. None of the proposed Project's objectives would be attained. Therefore, an alternative project location is not considered a feasible project alternative.

**Reduced Size Project (Housing Element Update).** The Housing Element Update consists of revising the County's current Housing Element to reflect the County's RHNA of 3,569 units. In addition to the mandatory RHNA assignment, the Project also includes planning for accessory dwelling units (ADUs) and density bonus units as allowed by State housing law, as well as buffer sites required by HCD. Thus, the total number of units planned for in the 2023 to 2031 Housing Element is 5,214 units (see Table 3-2 in Project Description).



The proposed Project would result in significant and unavoidable impacts, as well as impacts that are reduced to less than significant with mitigation. However, consideration of a reduced size project alternative with a smaller number of sites available for residential development accommodating a smaller number of housing units in order to reduce the significant impacts identified in the EIR is infeasible because it would not allow the County to prepare a Housing Element Update that meets the RHNA requirements or State housing law. Thus, a reduced project alternative would not meet the County's project objectives for the Housing Element Update and is not a feasible project alternative.

### **22.3 ALTERNATIVES SELECTED**

The following alternatives have been evaluated in comparison to the proposed Housing and Safety Elements Update project:

- Alternative 1: No Project
- Alternative 2: Reduced VMT
- Alternative 3: Reduced Utility Impacts Alternative (Water & Wastewater)

In accordance with State CEQA Guidelines Section 15126.6, (1) an “environmentally superior alternative” has been identified, and (2) the discussion of the impacts of the alternatives is less detailed than the discussions in chapters 4 through 20 (the environmental topic chapters). Table 22-4, presented at the end of the chapter, qualitatively summarizes the impacts of the alternatives compared to impacts of the proposed Project.

### **22.4 ALTERNATIVE 1: NO PROJECT – EXISTING COUNTYWIDE PLAN**

State CEQA Guidelines Section 15126.6(e) requires an EIR to analyze the specific alternative of “No Project”. The purpose of describing and analyzing the No Project alternative is to allow decision makers to compare the impacts of approving a proposed project with the impact of not approving the proposed project. The No Project Alternative shall discuss the existing conditions at the time the EIR notice of preparation is published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

Additionally, State CEQA Guidelines Section 15126.6(e)(3)(a) states that when the project is the revision of an existing land use or regulatory plan, the “No Project” alternative will be the continuation of the existing plan. Typically, this is a situation where new projects would be proposed under the existing plan. Thus, the impacts of the proposed project would be compared to the impacts that would occur under the existing plan.

Although the No Project Alternative does not meet any of the Housing and Safety Elements Update project objectives and is not considered a feasible project alternative, it is presented below as required by the State CEQA Guidelines.

### **22.4.1 Alternative 1: No Project – 2007 Countywide Plan (CWP)**

*Housing Element:* Under the No Project Alternative, the County would not update the existing 2015 to 2023 Housing Element. The existing Housing Element would continue to direct the County's decisions related to housing development and the RHNA assignment of 185 units in the current Housing Element would remain the County's goal for new housing units<sup>1</sup>. The 2015 to 2023 Housing Element goals, policies, and implementing programs would continue to guide County decisions regarding housing within the county. Under these conditions it would be reasonable to assume that applications for new housing developments consistent with the 2015 to 2023 Housing Element and other portions of the CWP would continue to be submitted and approved.

The proposed 2015–2023 Housing Element was a revised version of the 2007–2014 Housing Element. The housing sites included in the 2015–2023 Housing Element include the same housing sites inventory as the 2007–2014 Housing Element, except for one site (Site #11: 650 North San Pedro), which was removed from the inventory. No new housing sites were considered. The total number of housing units considered for the Housing Element was reduced from 823 units to 801 units (Marin 2014).

The potential environmental impacts of implementing the existing 2015-2023 Housing Element were determined by reviewing its supporting CEQA documentation, including the following documents:

#### **CEQA Documentation for the Existing 2015-2023 Housing Element**

The environmental impacts of the 2015 to 2023 Housing Element EIR were examined in a 2014 document titled *Addendum to the 2013 Marin County Housing Element Supplement to the 2007 Countywide Plan EIR ("2013 SEIR")*<sup>2</sup>. The Marin County Housing Element 2013 SEIR to the 2007 Countywide Plan EIR was prepared for the County's 2007-2014 Housing Element. The 2014 Addendum to the 2013 SEIR was prepared for the 2015-2013 Housing Element.

The 2013 SEIR consists of the following documents:

- 2012 Draft Marin County Housing Element Supplement to the 2007 Countywide Plan EIR – Draft Supplemental Environmental Impact Report (December 20, 2012) ("Draft SEIR")
- Marin County Housing Element Supplement to the 2007 Countywide Plan EIR – Final Supplemental Environmental Impact Report – Responses to Comments to the Draft Supplemental Environmental Impact Report (May 2013) ("Final SEIR")

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<sup>1</sup>Source: Marin Countywide Plan, Chapter 3.8 2015-2023 Housing Element, Figure IV-2 Regional Needs Housing Allocation, 2015-2023 Planning Period.

<sup>2</sup>State Clearinghouse No. 2012072028, certified September 24, 2013

- Marin County Housing Element Supplement to the 2007 Countywide Plan EIR – Final Supplemental Environmental Impact Report – Responses to Comments to the Draft Supplemental Environmental Impact Report AMENDMENT (June 2013) (“Final SEIR Amendment”)

The summary of environmental impacts associated with the existing 2015-2023 Housing Element have been obtained from these documents.

Safety Element: Under the No Project Alternative, Section 2.6, Environmental Hazards, of the Natural Systems and Agricultural Element would continue to function as the County’s Safety Element. Section 2.6 discusses the hazards posed by geologic and seismic, flooding, and wildfire hazards. It does not cover the new spectrum of environmental hazards required by Gov. Code §65302(g) to be covered in the updated Safety Element as applicable, including climate change and resiliency planning (drought, extreme weather events, extreme heat events), sea level rise, or a more robust discussion and analysis of wildfire hazards.

The environmental impacts of existing Section 2.6, Environmental Hazards, of the CWP were analyzed in an EIR adopted for the 2007 Countywide Plan. The 2013 SEIR for the 2007-2014 Housing Element and the Addendum to the 2013 SEIR for the 2015- 2023 Housing Element did not include analysis of a Safety Element update.

#### **22.4.2 Comparison of Impacts**

The impacts of the No Project Alternative are examined qualitatively to allow comparison with the Project. In the comparison of impacts discussion presented below, the term “similar impacts” indicates the alternative, and the proposed Project would have the same type/number and same degree of impact. The term “fewer impacts” means the alternative, or the proposed Project would have fewer number of and less degree of identified impacts than the other. The term “less impact” indicates the alternative or the proposed Project would have the same type/number of impacts but at a reduced level or degree than the other.

The impacts analysis in this EIR concludes that the proposed Project would have few potentially significant impacts associated with the proposed Safety Element Update. Therefore, the proposed Safety Element Update is considered to have similar impacts to the No Project Alternative and may be beneficial because it would provide new policy and implementing programs that would protect people and structures from environmental hazards and provide direction on the County’s climate change resiliency planning. the effects of climate change. Therefore, this comparison of impacts focuses on comparing the Housing Element Update to the existing CWP unless specifically indicated otherwise.

A. Aesthetic Resources. The Project would have impacts on scenic vistas (Impact 4-1) and impacts on existing visual character and quality (Impact 4-2), requiring Mitigation Measures 4-1 and 4-2, respectively; however, even with these mitigation measures, these impacts would remain significant and unavoidable.

Because the proposed Housing Element Update results in an increase in RHNA from 185 units in the existing 2015-2023 Housing Element to 3,569 units in the proposed Housing Element Update, the greater land disturbance and loss of vegetation due to potentially greater

development facilitated by the Housing Element Update would contribute to greater impacts on scenic resources. *For these reasons, the No Project Alternative would have less (less degree/level of impact) aesthetic impacts than the proposed Project.*

**B. Agriculture & Forestry.** The Addendum to the SEIR for the 2015- 2023 Housing Element found that the conversion of agricultural lands to non-agricultural uses would remain a significant unavoidable project and cumulative impact as identified in the 2007 CWP EIR.

The proposed Housing Element Update would include some housing sites (or portions of sites) that are located on Farmland of Local Importance or on Grazing Land, and therefore could result in the conversion or change in farmland to non-agricultural use. However, the County has adopted CWP policies that protect agricultural uses (Policy AG-1.1, AG-1.3, AG-1.4, and AG-1.5). Their full text is included in Chapter 5.2.3 (Regional/Local Regulations). Compliance with these adopted CWP policies and County agricultural and resource-related district regulations would ensure that any potential impacts related to the conversion or change in farmland to non-agricultural use from future housing development facilitated by the Project would be less-than-significant.

*Based on the findings of the Addendum to the SEIR for the 2015- 2023 Housing Element and the conclusion of Significant Unavoidable impacts to Farmland of Local Importance and Grazing Land, the proposed Project would have fewer impacts than the No Project Alternative.*

**C. Air Quality.** The 2007 CWP EIR identified Impact 4.3-1 (Inconsistency with Clean Air Plan) and Impact 4.3-2 (Inconsistency with Clean Air Plan Transportation Control Measures) as significant unavoidable project and cumulative impacts. The 2013 SEIR for the 2007-2014 Housing Element and the 2014 Addendum to the 2013 SEIR for the 2015-2023 Housing Element determined that both of those Housing Elements would have the same significant and unavoidable air quality impacts. All other air quality impacts were determined to be less than significant with mitigation.

The air quality analysis in this EIR found that even with Mitigation Measures 6-1, 6-2, and 6-3, the proposed Project would have significant and unavoidable impacts for Impact 6-1: Conflict with the Local Air Quality Plan and Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Operational); Impact 6-2: Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Construction); and Impact 6-3: Generate Toxic Air Contaminant Emissions that Expose Sensitive Receptors to Substantial Pollutant Concentrations During Construction.

*Because of the larger number of housing units included in the proposed Housing Element Update compared to the current 2015-2023 Housing Element, the No Project Alternative would result in less air emissions from housing construction and VMT and would have less impacts on air quality.*

**D. Biological Resources.**

**Housing Element:** The 2007 CWP EIR identified Impact 4.6-2 (Sensitive Natural Communities) and Impact 4.6-4 (Wildlife Habitat and Movement Opportunities) as significant unavoidable project and cumulative impacts, even with mitigation included in the project (Mitigation

Measures 4.6-2 and 4.6-4). The Addendum to the 2013 SEIR for the 2015-2013 Housing Element also identified these same impacts to sensitive natural communities and wildlife habitat and movement as significant and unavoidable. All other impacts to biological resources were found to be less than significant, with some requiring mitigation to reduce potentially significant impacts to less than significant levels.

The biological resources impact analysis for the proposed Project identifies several potentially significant impacts on biological resources and recommends mitigation measures to reduce all impacts to less than significant.

*Because of the large number of housing units included in the proposed Housing Element Update and the land disturbance associated with the housing development, the No Project Alternative would have fewer biological resource impacts.*

Safety Element: The 2007 CWP EIR did not analyze the potential impacts of Safety Element issues.

Implementation of the proposed Safety Element Update policies and programs have potential to impact sensitive species and their habitats. Safety Element Update-recommended actions that could have impacts to biological resources include vegetation removal, widening of roads and trails for emergency vehicle access, construction of flood protection armoring structures such as flood barriers or flood walls, and construction of, or improvements and modifications to, levees, and improvements to protect development from sea level rise. Implementation of existing County policies and programs designed to protect biological resources and mitigation measures recommended would reduce Safety Element Update impacts on special-status species and sensitive habitats to less than significant.

*Because the No Project Alternative does not include a Safety Element component, the No Project Alternative would have both fewer types of impacts and less degree of the same impacts to biological resources than the proposed Project.*

E. Cultural and Historical Resources. The 2014 Addendum to the 2013 SEIR concluded that the 2015-2023 Housing Element would have a less than significant impact on cultural and historic resources. Even with mitigation, the proposed Project was found in this EIR to have significant and unavoidable impacts to historic resources (Impact 8-1: Destruction/Degradation of Historic Resources and Mitigation Measure 8-1). *Therefore, the No Project Alternative would have fewer impacts on historic resources than the proposed Project.*

F. Geology and Soils. The geology and soils impact analysis for the proposed Housing Element Update found that all impacts would be less than significant with mitigation. Any housing development that is proposed and approved under either the proposed Project or the No Project Alternative would be planned, designed, and constructed according to all state and County requirements for seismic safety and geologic hazard abatement. *Therefore, the proposed Project and the No Project Alternative would have similar geology and soils impacts because development under either housing element would occur in accordance with the same requirements for geotechnical design.*

G Greenhouse Gas Emissions and Energy. The 2014 Addendum to the 2013 SEIR found that the existing 2015-2023 Housing Element would have a significant unavoidable impact on GHG emissions. The GHG impact analysis for the proposed Project determined it would have a significant unavoidable impact, even with mitigation for Impact 10-1: Generate Significant Greenhouse Gas Emissions and Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purposes of Reducing Greenhouse Gas Emissions.

*Because the proposed Project has a significantly higher RHNA assignment than the existing 2015-2023 Housing Element and would result in greater GHG emissions from greater VMT and greater GHG construction emissions from housing construction, the proposed Project would have a greater GHG impact than the No Project Alternative.*

H. Hazards and Hazardous Materials. The hazards analysis in this EIR of the proposed Project found all impacts to be less than significant. Any housing constructed under either the No Project Alternative or the proposed Project would be subject to the same site screening analysis and conformance with state and County policies for protection of sensitive receptors to hazardous materials. *Therefore, the proposed Project and the No Project Alternative would have similar (same type and same degree of) hazards and hazardous materials impacts.*

I Hydrology and Water Quality.

Housing Element: The 2007 CWP EIR identified Impact 4.5-7 (Exposure of People or Structures to Flood Hazards) and Impact 4.7-8 (Tsunamis and Seiches) as significant unavoidable project and cumulative impacts, even with the adoption of mitigation measures. The Addendum for the existing 2015-2023 Housing Element found that the Element would have the same significant and unavoidable impacts. All other hydrology impacts were found to be less than significant for the existing 2015-2023 Housing Element.

The hydrology and water quality impact analysis for the Housing Element Update in this EIR determined that all impacts to hydrology and water quality would be less than significant. *Because housing developed under either the proposed Project or the existing 2015-2023 Housing Element would adhere to all relevant state and County policies regarding the protection of water quality, the proposed Housing Element Update and the No Project Alternative would have similar impacts on hydrology and water quality.*

Safety Element: The proposed Safety Element contains many new policies related to flood hazards and planning for sea level and severe weather events that are not in the 2007 CWP. The policies in the Safety Element Update would address the potential flooding and sea level hazards in the County and would be beneficial to the protection of people and infrastructure from these hazards. *The proposed Safety Element Update would have fewer hydrology and water impacts than the No Project Alternative.*

J. Land Use and Planning. The 2014 Addendum for the 2015-2023 Housing Element determined that the Housing Element would result in less than significant land use impacts.

The land use and planning analysis of the proposed Project in this EIR also found all impacts to be less than significant. The Project would not physically divide an established community or conflict with any adopted plan, policy, or regulation for the purpose of avoiding or mitigating

environmental effects. New policies in the Safety Element would have a beneficial effect on land use planning and safety. Any development constructed under either the No Project Alternative or the proposed Project would be subject to adopted General Plan, zoning, and development review standards and processes, as well as with adopted regional plans (e.g., for air quality, GHG, transportation). *Therefore, the proposed Project and the No Project Alternative would have similar land use and planning impacts.*

K. Noise. The 2007 Countywide Plan EIR identified Impact 4.4-5 (Construction Noise) as a significant unavoidable project and cumulative impact, because new development would temporarily elevate noise levels at adjacent noise sensitive land uses. Countywide Plan EIR Mitigation Measure 4.4-5 would reduce this impact, but not to a less-than-significant level, because construction noise levels would continue to be elevated at adjacent noise sensitive land uses. The 2013 SEIR for the 2007-2014 Housing Element determined that housing would be denser than what was described in the 2007 CWP EIR, and the significant and unavoidable impact would remain.

The noise impact analysis for the proposed Project in Chapter 15 of this EIR identifies Impact 15-1: Substantial Permanent Increases in Traffic Noise Levels as a significant and unavoidable impact with no feasible mitigation available, based on the conservative modeling assumptions made for the impact analysis (see Chapter 15 for discussion of modeling assumptions). The Project could result in a substantial permanent change in traffic noise levels in areas already affected by high noise levels that exceed County guidelines for noise and land use compatibility.

The 2015-2023 Housing Element was found to have a significant unavoidable impact from noise generated by housing construction, which would temporarily elevate noise levels at adjacent noise sensitive land uses. The noise impact analysis for the proposed Project found this impact to be less than significant because it would be temporary and housing construction would occur consistent with County policies and the Noise Ordinance. *Because the proposed Project would result in the construction of significantly more housing units than the No Project Alternative and generate more construction noise, the No Project Alternative would have fewer noise impacts.*

L. Population and Housing. The 2007 CWP EIR identified Impact 4.1-2 (Growth and Concentration of Population) as a significant unavoidable project and cumulative impact, because development consistent with the CWP would induce substantial growth within the unincorporated area. The 2014 Addendum for the existing 2015-2023 Housing Element determined that this impact would remain significant and unavoidable.

The impact analysis for the proposed Project in this EIR found that the Project would have less than significant impacts on population and housing, especially because the most recent State CEQA Guidelines Appendix G population question, which was updated since the 2014 Addendum to the 2013 Marin County Housing Element Supplement to the 2007 Countywide Plan EIR for the 2015-2023 Housing Element was adopted, now refers to **unplanned** population growth. As discussed in this EIR (e.g., Chapter 16, Population and Housing), planned population growth in itself is not considered a significant environmental impact, but planned population growth still can result in impacts on other environmental areas, as discussed in this Alternatives chapter. The proposed Housing Element Update would result in significantly more population growth within unincorporated Marin County than under the existing 2015-2023

Housing Element. *For this reason, the No Project Alternative would have fewer direct population and housing impacts than the proposed Project.*

M. Public Services (including Recreation). Both the existing 2015-2023 Housing Element and the proposed Project were found to have less than significant impacts on public services. However, because the proposed Project would result in substantial population growth in unincorporated Marin County, it is assumed to have a greater impact on public services than the existing Housing Element. *Therefore, the No Project Alternative would have fewer impacts on public services than the proposed Project.*

Both the existing 2015-2023 Housing Element and the proposed Project would have less than significant impacts on recreation facilities. However, because the proposed Project would result in substantial population growth in unincorporated Marin County, it is assumed to have a greater impact on recreation facilities than the existing Housing Element. *Therefore, the No Project Alternative would have fewer (fewer types and less degree of) impacts on recreation facilities than the proposed Project.*

N. Transportation. As described in EIR Chapter 18, Transportation, historically the transportation impacts of land development and transportation projects were evaluated based on a congestion-focused metric referred to as level of service (LOS), which is generally tied to the average delays that drivers experience. Based on California Senate Bill 743 and revisions to the State CEQA Guidelines (Section 15064.3), except for some transportation projects, “[A] project’s effect on automobile delay shall not constitute a significant impact on the environment” (15064.3[a]). The use of an alternate metric, vehicle miles traveled (VMT), as a measure of environmental impact related to vehicle travel, became mandatory on July 1, 2020. Accordingly, the transportation analysis completed for the Housing Element Update focuses on the analysis of VMT, and LOS is no longer an impact issue under CEQA.

Housing Element: The 2007 Countywide Plan EIR identified 23 significant unavoidable transportation impacts. Twenty-two of the impacts were level of service (LOS) based impacts, while one impact, Impact 4.2-1 Increase in Vehicle Miles Traveled (VMT) (project and cumulative) was based on the current CEQA significance threshold of VMT. The 2013 SEIR for the 2007-2014 Housing Element and the 2014 Addendum for the 2015-2023 Housing Element determined that those housing elements would have the same transportation impacts.

The EIR transportation analysis determined that the Project would not conflict with adopted policies, plans, or programs regarding roadways (Impact 18-1), public transit (Impact 18-2), and bicycle and pedestrian facilities (Impact 18-3); would not result in hazards due to design features or incompatible uses (Impact 18-5); and would not result in adequate emergency access (Impact 18-6). However, the proposed Housing Element Update was found to have a significant and unavoidable impact related to VMT (Impact 18-4) even with adoption of Mitigation Measure 18-4.

Because the proposed Housing Element Update would result in substantially more housing being constructed in unincorporated Marin County, resulting in significantly more VMT than what would occur under the existing 2015-2023 Housing Element, *the No Project Alternative would have less VMT impact.*



*Safety Element:* Implementation of the Safety Element Update does not have any identified transportation impacts and would have beneficial results on emergency evacuation planning, coordination, and roadway system improvements through implementation of Safety Element Updated policies and implementing programs aimed at fostering communication and coordination with the public and emergency responders; public education and making emergency evacuation maps available; identification of areas that do not have two points of emergency ingress/egress; vegetation management and defensible space programs; and ensuring development in high fire hazard zones meets all requirements for such development. *The proposed Safety Element Update would result in less (same type but less degree of) transportation impacts than the No Project Alternative.*

#### O. Utilities and Service Systems.

*Housing Element:* The 2007 CWP EIR identified significant unavoidable water supply and demand impacts (both project and cumulative) consisting of Impact 4.9-1 (Adequacy of Water Supply During a Normal Year), Impact 4.9-2 (Adequacy of Water Supply During a Drought and Multi-Drought Years), Impact 4.9-4 (Impact to Groundwater Supply), Impact 4.9-5 (Interference with or Degradation of Water Supply), and Impact 4.9-6 (Secondary Impacts).

The 2013 SEIR for the 2007-2014 Housing Element and the 2014 Addendum to the 2013 SEIR for the 2015-2013 Housing Element determined that, while properties proposed for residential development would be developed at higher densities than were analyzed in the 2007 CWP EIR, the overall number of residential units that could be developed would remain the same as under the 2007 CWP. Therefore, these would remain significant unavoidable impacts, but would not be substantially more severe than the impacts analyzed in the 2007 CWP EIR.

The utilities and service systems impact analysis for the proposed Housing Element Update identified several significant and unavoidable impacts to water and wastewater treatment service providers either because of limited water supplies or limited wastewater treatment plant and infrastructure capacity. No feasible mitigation measures are available to reduce these impacts to less than significant levels. The proposed Project would have the following significant and unavoidable impacts: Impact 19-2a: Project and Cumulative Water Supply Impacts: West Marin Community Service Districts and North Marin Water District – West Marin; Impact 19-2b: Project and Cumulative Water Supply Impacts: Water Districts; Impact 19-2c: Project and Cumulative Water Supply Impacts: Individual Water Supply Systems; Impact 19-3a: Wastewater Treatment Capacity Impacts: Community Service Districts Providing Sewage Treatment; Impact 19-3b: Wastewater Treatment Capacity Impacts: Sanitary Districts; and Impact 19-3c: Wastewater Treatment Capacity Impacts Outside of Sanitary Districts and Community Service Districts Providing Sewage Treatment.

Because the proposed Project is planning for a greater number of housing units than contemplated in the existing 2015-2023 Housing Element, it would have more severe significant and unavoidable impacts on water and wastewater service providers. *The No Project Alternative would have fewer impacts on utilities and service systems than the proposed project.*

*Safety Element:* Implementation of the Safety Element Update would not have any identified significant utility or service system impacts and would eventually have beneficial effects on protecting infrastructure from being damaged by environmental hazards through implementation

of planning efforts for climate change and resiliency planning, preparation for severe weather events and extended drought, planning for future sea level rise, and more robust measures to protect buildings and infrastructure from the effects of wildfire. *The proposed Safety Element Update would result in fewer types of impacts and less degree of utilities and service system impacts than the No Project Alternative.*

P. Wildfire.

*Housing Element:* The 2007 CWP EIR found that implementation of the CWP would have a less than significant impact due to exposure of people or structures to wildland fire hazards (Impact 4.10 – Wildland Fire Hazards). The 2013 SEIR for the 2007-2014 Housing Element and the 2014 Addendum to the 2013 SEIR for the 2015-2023 Housing Element both determined that housing development considered under each element would be consistent with the CWP, and would not have any new or substantially more severe impacts related to wildland fire hazards than had previously been evaluated in the 2007 CWP EIR.

The proposed Housing Element Update would place new housing in the geographically defined Wildland-Urban Interface (WUI) and high fire hazard severity zones. Existing County policies and regulations and new Safety Element Update policies would require all new housing development and redevelopment to meet current Development Code requirements and all building code standards relevant to the particular fire hazard severity zone of the individual project. Compliance with all codes, regulations, and standards would reduce potentially significant wildfire hazard impacts to residential development to less than significant.

Because all new housing development would have to be constructed consistent with the current Fire Safety Building Codes, and all regulations and standards for building in wildfire fire hazard severity zones and the WUI, *the No Project Alternative and the proposed Project are considered to have similar wildfire hazard impacts.*

*Safety Element:* The Safety Element Update component of the Project contains many new policies and implementing programs focused on reducing wildfire hazard to people and infrastructure (see Section 20.3.2 Proposed Policies and Actions to Avoid or Reduce Significant Impacts). *Adoption of the Safety Element Update would have a beneficial effect in planning for and responding to wildfire hazard in the unincorporated County areas compared to the No Project alternative.*

### **22.4.3 Ability to Meet Basic Project Objectives**

The Project goals and objectives are presented in Section 21.1, above.

The No Project Alternative would only partially meet the County's Housing Element Update objectives. The existing 2015-2023 Housing Element has goals and policies that are somewhat consistent with the Project objectives, but the County has articulated additional Housing Element Update objectives not reflected in the current Housing Element. The 2015-2023 Housing Element does not meet the current RHNA assignment and, therefore, would not meet the County's objective of preparing an updated Housing Element that demonstrates conformance with State housing law and the current RHNA assignment. Marin County would face significant penalties for not having an approved housing element, including limited access

to State funding, fines, threat of lawsuit from the development community and housing advocates, and loss of local control on building matters, including issuance of building permits or granting zoning changes, variances or subdivision map approvals.

The proposed Project includes the update of Section 2.6 Environmental Hazards of the Natural Environment and Agriculture Element of the CWP. Section 2.6 Environmental Hazards serves as the County's Safety Element. New State laws require jurisdictions to update the General Plan Safety Element in coordination with the Housing Element update, as well as to plan for additional environmental hazards such as climate change hazards (extreme weather, extreme heat days, and sea level rise) and increased wildfire hazard. The No Project Alternative would not meet any of the County's goals and objectives established for the Safety Element Update.

## **22.5 ALTERNATIVE 2: Reduced VMT Alternative**

### **22.5.1 Alternative 2: Reduced VMT**

The EIR impact analysis has identified VMT and the resulting air quality and GHG emissions from the proposed Housing Element Update and the candidate list of sites as having significant and unavoidable impacts even with mitigation. The goal of the Reduced VMT Alternative is to reduce the VMT associated with the more remote West Marin housing sites and concentrate housing opportunity sites near the Highway 101 corridor and public transit.

#### **Housing Element Update VMT Impacts:**

Chapter 18 Transportation of this EIR analyzes the Housing Element Update transportation impacts. Many factors affect VMT including the average distance residents commute to work, school, and shopping, as well as the proportion of trips that are made by non-automobile modes. Areas that have a diverse land use mix and ample facilities for non-automobile modes of travel, including public transit, tend to generate lower VMT than auto-oriented suburban or rural areas. The existing average regional VMT per capita is 12.6 miles, as reported from the TAMDM model used in the transportation analysis.

The threshold identified for measuring the Housing Element Update's VMT impact is presented in Section 18.4.1 Significance Criteria and states: "For the purposes of this evaluation, this impact would be significant if development of the housing sites identified in the Housing Element Update would generate a home-based VMT per capita that is greater than 10.7 miles, which corresponds to a level of 15 percent below the regional average VMT per capita."

The VMT modeling results indicate the Housing Element Update would on average generate 19.7 VMT per capita, exceeding the applied 10.7 VMT per capita threshold of significance by approximately 84 percent. This would be a significant impact.

The Housing Element Update has such high VMT because of the less dense development patterns in Marin County. Many housing sites are further from the core regional population and employment centers, and this situation results in average per capita VMT levels that are well above the regional average and significance threshold. While housing in West Marin might accommodate individuals who are employed in the area, there is no way to ascertain such specific travel patterns within the model. For these reasons, it must be assumed that residential

development projects in unincorporated Marin County would not achieve VMT standards that are set using an overall regional average.

The EIR recommends Mitigation Measure 18-4, which requires all individual residential development projects to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. VMT reduction techniques would vary depending on the location of each development site and the availability of nearby transportation services. However, because of the uncertainty of future projects' ability to meet the required 15 percent reduction in VMT, particularly those sites in suburban and rural locations where it is infeasible to provide new or more frequent transit service and where few VMT reduction strategies are viable, this impact would be significant and unavoidable.

### **Reduced VMT Alternative Characteristics**

The Reduced VMT Alternative would result in most of the proposed housing sites, except those screened out by the State CEQA Guidelines (see Section 18.3 Vehicles Miles Traveled Methodology), being located within an approximate two-mile radius of the US 101 corridor, including 0.5 miles on either side of Sir Francis Drake Boulevard to Fairfax. The intent of this alternative is to reduce the significant unavoidable VMT impact, and the resulting significant unavoidable air quality and GHG impacts, associated with the Housing Element Update by lowering the average per capita VMT. This alternative would place housing sites nearer to the urban core of Marin County and closer to transit and employment, and relocate the housing sites that are in the more rural areas of the unincorporated county. Compared to other parts of the county, the urban core of Marin County would (1) tend to have lower VMT per capita, and (2) have substantially better VMT mitigation options available because of proximity to mass transit and other transportation demand management (TDM) solutions. This alternative would result in lower VMT per capita than the proposed Project; however, it would still result in significant unavoidable VMT, air quality, and GHG impacts.

The selection of housing sites to be included in Alternative 2 was informed by the VMT modeling results obtained from the TAMDM model for the candidate sites. The modeling results tend to show residential VMT per capita levels that are lower along the US 101 corridor than other parts of Marin County. Similar characteristics were seen for the segment of Sir Francis Drake Boulevard between I-580 and Fairfax.

These observations are logical in that land uses along these corridors are more diverse than other parts of the County and include a mix of residential, employment, and service uses; tend to have overall greater residential densities than other parts of the County; are in many cases served by the most robust transit services in the County, including bus service, SMART rail, and ferries; and in many cases are proximate to a well-developed network of trails and bike paths that facilitate non-auto travel. The distances residents need to commute to work and school, or to access retail and services, are generally shorter along these corridors than in other parts of the county. Each of these characteristics helps to shorten automobile trip lengths and thereby the VMT generated per capita. The Reduced VMT Alternative identifies many of its associated housing units as being along these corridors.

The alternative also includes select sites in other parts of the county that qualify for VMT screening criteria identified in the Governor's Office of Planning and Research (OPR) *Technical*

*Advisory on Evaluating Transportation Impacts in CEQA, December 2018*, where certain projects may be presumed to generate a less-than-significant amount of residential VMT per capita.<sup>1</sup> The housing projects on these sites that meet this screening criteria would not be required to evaluate VMT during the development permit approval and CEQA review process.

Figure 22-1 shows the area defined by this alternative and identifies which housing sites would be affected by this alternative. The red dots are the housing sites that would be relocated to within two miles of the Hwy 101 Corridor. The blue dots are housing sites that would not need to be relocated because they are either within Hwy 101 Corridor (yellow shaded area of Figure 22-1) or they are small and fall below the OPR Technical Advisory VMT screening criteria and would remain where they were originally proposed. These sites could still be developed under this alternative.

In total, based on data modeled for the EIR transportation analysis, Alternative 2 could include development of up to 4,735 residential units, which is above the County's RHNA assignment (3,569) and the Total Proposed Sites as listed in Table 3-2 in Chapter 3 Project Description (3,928). This 4,735-unit number includes the same density bonus (1,286) and opportunities for accessory dwelling units (ADUs) (256) as the proposed Project. Table 22-1 presents a list of the housing sites by address that would be relocated somewhere within the Hwy 101 corridor under this alternative. Also see Table 3-3 in Proposed Project Sites in the Project Description for details on each project site.

**Table 22-1:  
Reduced VMT Alternative – Housing Sites Removed**

<b>Housing Site</b>	<b>Units Removed</b>
6760 Sir Francis Drake Boulevard	8
Inverness County Site	13
Nicasio Corp Yard - County	16
Office - Lagunitas (Upper Floors and Rear Prop)	16
Olema	36
Olema Catholic Church	24
Peace Lutheran Church	6
Presbytery of the Redwoods	3

<sup>1</sup> CEQA allows for the use of screening thresholds or criteria to identify certain types of projects that can be expected to cause a less-than-significant impact without needing to conduct a detailed analysis (State CEQA Guidelines Sections 15063(c)(3)(C), 15128, and the environmental checklist included in CEQA Appendix G). The OPR Technical Advisory suggests that lead agencies use such criteria to “screen out” VMT impacts for qualifying projects and includes descriptions of several screening types. The following are the screening criteria identified in the OPR Technical Advisory that may pertain to residential projects: 1) Projects that generate or attract fewer than 110 trips per day may be presumed to have a less-than-significant impact; this translates to approximately 11 single family homes or 16 to 24 multifamily apartments (depending on density); 2) Projects located within one-half mile of a major transit stop as defined in Public Resources Code 21064.3; in Marin County the only locations qualifying are those within one-half mile of SMART stations and ferry terminals; 3) Projects containing 100 percent affordable residential development in infill locations, or locations where a jobs/housing imbalance exists and affordable housing would be expected to result in shorter commute trips.

**Table 22-1:  
 Reduced VMT Alternative – Housing Sites Removed**

Housing Site	Units Removed
Pt. Reyes Coast Guard Rehabilitation/Conversion	50
Pt. Reyes County Vacant Site	37
Saint Cecilia Church	16
San Domenico School	50
Stinson Beach Commercial	5
Tomales	11
Tomales Catholic Church	13
Tomales Joint Union High School District	14
Tomales Nursery	6
Vacant Pt. Reyes Station	4
Vacant Tomales	26
Total Units Removed	354
Reduced VMT Alternative Number of Units	4,735
Project Site Inventory Number of Units	5,214
RHNA Number of Units	3,569
Source: Table 3-3 Proposed Project Site and MAZs (a geographical level of traffic modeling)	

The assessment of how these units would perform from a VMT perspective was completed by isolating all MAZs (a geographical level of traffic modeling) containing Alternative 2 sites from the broader set of candidate site MAZs analyzed in the TAMDM model, then reviewing the resulting home-based VMT per capita. Based on the analysis, it is estimated that Alternative 2 would generate approximately 10 to 15 percent fewer home-based VMT per capita than the overall list of candidate sites, both under near-term and cumulative conditions (approximately 16.7 to 17.7 VMT per capita). This level of reduction is considerable from a VMT perspective, although it would still result in residential VMT per capita levels that fall well short of meeting the applied significance threshold (10.7 miles VMT per capita) and uncertainty would remain as to the viability of fully mitigating VMT impacts. Therefore, the resulting VMT impact would remain significant and unavoidable.

While quantification of many VMT reduction strategies is best achieved at a site-specific project (versus programmatic) level, it is noted that many of the sites contained in Alternative 2 would have more VMT mitigation options available than sites in rural or less-populated areas. VMT strategies involving increases in residential density, improvements to non-auto networks, transit incentives including subsidies, shuttles to transit, bike share, priced parking and parking supply limits, and other TDM techniques, such as rideshare coordination, are also more viable in sites closer to urban centers (such as those contained in Alternative 2) than sites in less populated or rural areas.

This Alternative identifies units to be removed from the proposed Project and potentially relocated closer to the Hwy 101 corridor, but it does not identify specific sites where the relocated housing units could be accommodated. Should the County select this alternative as the environmentally preferred alternative and adopt it instead of the proposed Project, the County would then begin the process of identifying which sites of the already identified Project

sites identified in Table 3-3 in Project Description could accommodate them. If the County were to relocate these units to sites within the Hwy 101 and Sir Francis Drake corridor identified in

Figure 22-1, the best opportunity to do so would be to add these units to the St. Vincent's and Juvenile Hall, and possibly the Buck sites. Other sites may be able to accommodate a small increase in the number of units already identified for those sites, but most sites would be too small to accommodate more than a few units.

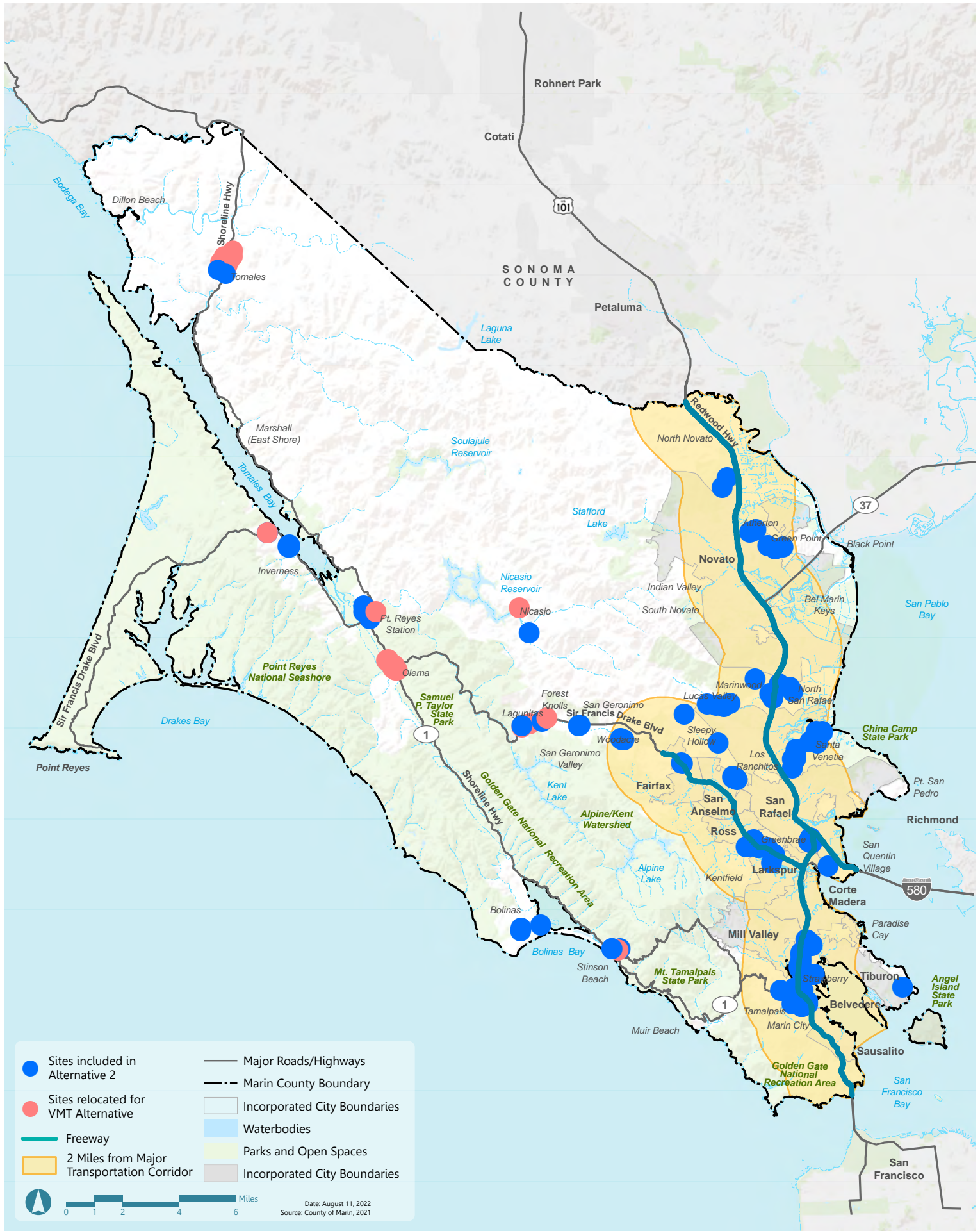
### 22.5.2 Comparison of Impacts

The impacts of Alternative 2, Reduced VMT Alternative, are examined qualitatively to allow comparison with the proposed Project.

Unless otherwise noted, the comparison of impacts focuses on how the alternative would compare to the Housing Element Update portion of the proposed Project because there would not be any effects of this alternative on the Safety Element or its environmental impacts. While there would be less housing development in areas of the County subject to certain hazards or emergency response constraints, the measures identified in the Safety Element would still be necessary to serve existing development.

A. Aesthetic Resources. The aesthetic impacts of the proposed Project on scenic vistas, scenic resources, and the visual quality of the proposed housing sites and their surroundings were found to be significant and unavoidable, even with adoption of Mitigation Measures 4-1 and 4-2.

Under the Reduced VMT Alternative, the larger housing sites in the more rural areas of the county, including the communities of Tomales, Inverness, Point Reyes Station, Olema, Nicasio, Forest Knolls, San Geronimo, Woodacre, Sleepy Hollow, Bolinas, and Stinson Beach, would be removed from the list of candidate housing sites. Smaller housing sites that fall below the size requirement for the CEQA VMT screening threshold are still viable housing sites in these areas and are included in this Alternative. See Figure 22-1. *Because this alternative removes the larger housing sites from the more rural areas of the unincorporated county communities, it would have less potential to contribute to impacts on scenic vistas, scenic resources, and visual quality than the proposed Project.*



**Figure 22.1 - Reduced VMT Alternative**



**B. Agriculture & Forestry.** The proposed Housing Element Update includes some housing sites (or parts thereof) that are located on Farmland of Local Importance or on Grazing Land. Considering the limited number of sites and existing CWP policies protecting agricultural uses would apply to proposed development proposals, the effects of conversion of Farmland of Local Importance or Grazing Land would be minimized. Project compliance with these adopted CWP policies and County agricultural and resource-related districts regulations would ensure that any potential impacts related to the conversion or change in farmland to non-agricultural use from future development facilitated by the Project would be less-than-significant.

Under the Reduced VMT Alternative, housing sites in the more rural parts of the County would be removed from the candidate site list, and several sites that are either Farmland of Local Importance or Grazing Land would be removed from the housing sites list in the Olema and Pt. Reyes Station areas, thereby reducing the amount of Farmland of Local Importance and Grazing Land that would be developed under the Housing Element Update. *For this reason, the Reduced VMT Alternative would have fewer impacts on agricultural resources than the proposed Project.*

**C. Air Quality.** The conservative air quality analysis in this EIR found that growth under the proposed Project would result in a cumulatively considerable net increase in operational criteria air pollutants for which the region is non-attainment. As a result, the Project would have significant and unavoidable impacts even with mitigation (Mitigation Measures 6-1, 6-2, 6-3) for Impact 6-1: Conflict with the Local Air Quality Plan and Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Operational); Impact 6-2: Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Construction); and Impact 6-3: Generate Toxic Air Contaminant Emissions that Expose Sensitive Receptors to Substantial Pollutant Concentrations During Construction.

*The Reduced VMT Alternative would have approximately 10–15% lower VMT per capita than the proposed Project and would, therefore, have correspondingly lower air quality emissions from VMT. The alternative would have less air quality impacts, although the impact would remain significant and unavoidable.*

**D. Biological Resources.** The biological resource impact analysis for the proposed Housing Element Update determined that all biological resources impacts would be less than significant or could be mitigated to less than significant with Mitigation Measures 7-1, 7-2, 7-3.1, 7-3.2, and 7-3.3.

The Reduced VMT Alternative eliminates some rural housing sites, which would avoid biological resource impacts to those sites, and locates the housing sites in more urbanized areas of the county. The more urban sites may have fewer biological resources that could be impacted by housing development and the sites may be served by sanitary sewer thereby eliminating the potential for septic systems in rural areas that result in impacts on biological resources. However, the location of where these sites would be relocated has not been formalized and assessing the potential biological impacts to the unknown sites is speculative. *Therefore, it is assumed that the Reduced VMT Alternative would have similar impacts (the same types and the same degree of impact) on biological resources as the proposed Project.*

E. Cultural and Historical Resources. The Housing Element Update would have a significant and unavoidable impact on historical resources even with adoption of Mitigation Measure 8-1. Impacts to archaeological and cultural resources from implementation of the Project would be less than significant with mitigation.

*Although the Reduced VMT Alternative relocates housing to the Hwy 101 Corridor, it would have a similar (same type and degree of) potential to impacts to historical resources as the proposed Project.*

F. Geology and Soils. The geologic impact analysis of the proposed Housing Element Update found that all geologic impacts would be less than significant. *The Reduced VMT Alternative would eliminate certain rural housing sites, but would have similar (same type and degree of) geologic impacts as the proposed Project because development under either scenario would occur in accordance with state and County requirements for seismic safety and County requirements for geotechnical design.*

G. Greenhouse Gas Emissions and Energy. The GHG impact analysis for the proposed Project found that the Project would have a significant unavoidable impact, even with mitigation, from Impact 10-1: Generate Significant Greenhouse Gas Emissions and Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purposes of Reducing Greenhouse Gas Emissions. The Project's GHG impacts are attributable to the VMT per capita the Project would generate.

The Reduced VMT Alternative would reduce the number of housing sites in the more remote, rural parts of the county where VMT per capita is estimated to be the highest, and relocate them closer to the Hwy 101 Corridor. This alternative is estimated to reduce per capita VMT by approximately 10-15% from Project levels and would result in a corresponding reduction in GHG emissions. *This alternative would have less GHG emissions than the proposed Project, but the GHG emissions would remain significant and unavoidable.*

H. Hazards and Hazardous Materials. The hazards analysis of the proposed Housing Element Update found all impacts to be less than significant. *The proposed Project and the Reduced VMT Alternative would have similar (same type and degree of) hazards and hazardous materials impacts.*

I. Hydrology and Water Quality. The hydrology impact analysis for the Project determined that all impacts to hydrology and water quality would be less than significant. The Reduced VMT Alternative may result in fewer housing sites being developed where septic systems are the only means to treat wastewater, thus avoiding potential future water quality impacts; it is speculative to determine at this time. *The proposed Project and the Reduced VMT Alternative would have similar impacts to hydrology and water quality.*

J. Land Use and Planning. The EIR land use and planning analysis of the proposed Project found all impacts to be less than significant. The Project would not physically divide an established community or conflict with any adopted plan, policy, or regulation for the purpose of avoiding or mitigating environmental effects. New policies in the Safety Element would have a beneficial effect on land use planning and safety. Any development constructed under either this Alternative or the proposed Project would be subject to adopted General Plan, zoning, and

development review standards and processes, as well as with adopted regional plans (e.g., for air quality, GHG, transportation). *Therefore, the proposed Project and the Reduced VMT Alternative would have similar land use and planning impacts.*

K. Noise. Chapter 15, Noise identified Impact 15-1: Substantial Permanent Increases in Traffic Noise Levels as significant and unavoidable with no feasible mitigation, based on the conservative modeling assumptions made for the impact analysis (see Chapter 15 for discussion of modeling assumptions). The Project could result in a substantial permanent change in modeled traffic noise levels in areas already affected by high noise levels that exceed County guidelines for noise and land use compatibility. Because a reduction in vehicle trips on specific, impacted roadway segments cannot be guaranteed, this impact would be significant and unavoidable, and no feasible mitigation is available.

The Reduced VMT Alternative would eliminate some housing sites in the more rural areas of the county where traffic noise may not impact the noise environment to the degree that new housing in more urban areas could. However, the proposed Project and the Reduced VMT Alternative would have similar numbers of housing sites in the more urbanized areas of the County where existing traffic noise creates an elevated noise environment. *For this reason, the proposed Project and the Reduced VMT Alternative would have a similar degree of significant and unavoidable impacts from a permanent increase in traffic noise levels.*

L. Population and Housing. The proposed Housing Element Update would have less than significant impacts on population and housing. The Reduced VMT Alternative eliminates some of the more rural housing sites and reduces the number of candidate housing sites, unless they can be relocated to different sites within the Hwy 101 Corridor. In total, this alternative would facilitate development of up to 4,735 residential units rather than the 5,214 units associated with the proposed Project. *Because the Reduced VMT Corridor Alternative provides less housing than the proposed Housing Element Update, indirect impacts related to population and housing, as discussed in this Alternatives chapter, would be less than under the proposed Project.*

M. Public Services (including Recreation). The proposed Project would have less than significant impacts on public services. The Reduced VMT Alternative would eliminate certain rural housing sites from the list of candidate sites and would result in a lower number of total units (4,735 units) than the proposed Project (5,214 units). *Because the Reduced VMT Alternative would have fewer housing units than the proposed Project, it would have less impacts on public services than the proposed Project.*

The proposed Project would have less than significant impacts on recreation facilities. *Because the Reduced VMT Alternative would have fewer housing units than the proposed Project, it would have less of an impact on recreation facilities than the proposed Project.*

N. Transportation. The Housing Element Update was found to have a significant and unavoidable impact related to VMT (Impact 18-4). This Reduced VMT Alternative has been proposed to reduce the significant VMT that would result from the proposed Project. *This Alternative would reduce the VMT estimated for the proposed Project by 10-15%. The VMT impact, however, would remain significant and unavoidable.*

O. Utilities and Service Systems. The Utility and Service Systems impact analysis for the proposed Project identified several significant and unavoidable impacts with no feasible mitigation to certain water and wastewater treatment service providers, either because of limited water supplies or limited wastewater treatment plant and infrastructure capacity. The proposed Project would have the following significant and unavoidable impacts: Impact 19-2a: Project and Cumulative Water Supply Impacts: West Marin Community Service Districts and North Marin Water District – West Marin; Impact 19-2b: Project and Cumulative Water Supply Impacts: Water Districts; Impact 19-2c: Project and Cumulative Water Supply Impacts: Individual Water Supply Systems; Impact 19-3a: Wastewater Treatment Capacity Impacts: Community Service Districts Providing Sewage Treatment; Impact 19-3b: Wastewater Treatment Capacity Impacts: Sanitary Districts; and Impact 19-3c: Wastewater Treatment Capacity Impacts Outside of Sanitary Districts and Community Service Districts Providing Sewage Treatment.

*The Reduced VMT Alternative would remove certain housing sites within the impacted Inverness and Bolinas Public Utility Districts (water service) and the Tomales Village Community Services District (wastewater treatment). Therefore, the Alternative would have fewer impacts on utility services providers than the proposed Project.*

P. Wildfire. The proposed Project would place new housing in the WUI and in high fire hazard severity zones. Existing County policies and regulations and new Safety Element Update policies would require all new housing development and redevelopment to meet current Development Code requirements and all relevant building code standards relevant to the specific fire hazard severity zone of the individual project. Compliance with all codes, regulations, and standards would reduce potentially significant wildfire hazard to residential development to less than significant. The wildfire impact analysis determined the proposed Project would have a less than significant impact on wildfire hazard.

Although the Reduced VMT Alternative would remove certain housing sites in the more rural areas of the county and would facilitate fewer housing units than the proposed Project (4,735 vs. 5,214 units), both the proposed Project and this Alternative would result in a substantial number of new housing units being built in the WUI and fire hazard severity zones. *For this reason, the Reduced VMT Alternative is considered to result in similar wildfire hazards as the Project.*

### **22.5.3 Ability to Meet Basic Project Objectives**

The Reduced VMT Alternative would allow the County to achieve most of the Housing Element Update project objectives and all of the Safety Element Update project objectives. The Reduced VMT Alternative would result in 4,735 units (including density bonus units and ADUs), which would meet the County's RHNA (3,569) and the Total Proposed Sites (3,028) but would not accommodate the total number of units included in the Project Site Inventory (5,214 units). To achieve the Project Site Inventory of 5,214 units, the housing sites removed under this alternative would have to be relocated to already identified sites in the housing inventory, most likely St. Vincent's and the Juvenile Hall sites, and possibly the Buck site.

The Housing Element proposes housing sites in West Marin and the rural parts of the County to meet the housing needs of those communities and to provide housing opportunities close to

jobs in the rural areas. Providing housing in West Marin and the rural areas of the County may increase VMT as shown in the Transportation chapter of this EIR. However, adding housing to the more remote areas of the County may also provide new opportunities for people working in these areas to live nearer where they work, thereby reducing VMT travel from that segment of the population. The County has a stated objective of providing additional housing throughout the unincorporated county communities. This alternative would eliminate the larger housing sites in the more rural communities of the county; however, the smaller sites that can be screened out from the CEQA VMT analysis would still be part of the alternative (see housing sites shown on Figure 22-1). The Reduce VMT Alternative would not fully meet the County's objective to provide housing throughout the unincorporated County.

This alternative would not alter the proposed Safety Element Update and would allow the County to achieve all Safety Element Update objectives.

## **22.6 ALTERNATIVE 3: REDUCED UTILITY IMPACT ALTERNATIVE (Water & Wastewater)**

### **22.6.1 Alternative 3: Reduced Utility Impact (Water & Wastewater)**

The proposed Project was found to have significant and unavoidable impacts associated with the provision of water and wastewater service to housing sites located in service districts that do not have the capacity to serve the amount of proposed development. Utility Chapter Table 19-2 – District Capacity for New Development lists the following water districts that do not have capacity to serve the proposed Project and other City and Town RHNA: North Marin Water District (Dry Years), North Marin Water District – West Marin service area, Bolinas Community Public Utility District, and Inverness Public Utility District.

Utility Chapter Table 19-10 Remaining Treatment Capacity After Development lists the following wastewater treatment service providers that do not have the capacity to serve the proposed Project and other City and Town RHNA: Bolinas Community Public Utility District, Tomales Village Community Service District, and Sewage Agency of Southern Marin (limited capacity). Significant and unavoidable impacts were found related to housing sites dependent on septic systems.

Development of certain housing sites would result in the need for substantial utility infrastructure improvements, and while the EIR analysis found this impact to be less than significant, the improvements would require planning, design, and funding, which may prove difficult to achieve during the eight-year Housing Element Update cycle.

This Reduced Utility Impact Alternative would result in the relocation of housing sites from service districts that do not have the capacity to serve new development to sites that have already been identified as proposed housing sites in areas where water and wastewater service providers have greater capacity to serve new development. This alternative also includes relocating housing sites that would require significant infrastructure improvements.

This alternative does not address significant and unavoidable Impact 19-2c: Project and Cumulative Water Supply Impacts: Individual Water Supply Systems and Impact 19-3c: Wastewater Treatment Capacity Impacts Outside of Sanitary Districts and Community Service

Districts Providing Sewage Treatment, because these impacts are related to housing sites outside of utility district service boundaries that rely on private potable water supplies and septic systems. These two impacts are related to the uncertainty of water supplies during drought conditions and specific housing sites being able to accommodate new housing units due to insufficient or inadequate area for a sanitary septic system. This alternative focuses on reducing impacts to public utility districts providing water or wastewater treatment to unincorporated areas of Marin County.

### **Removal of Housing Sites from Service Provider Boundaries**

The Housing Element Update would have significant unavoidable water and wastewater treatment impacts within the districts of certain service providers under the Project and cumulative growth scenario because these districts would not have the ability to serve the amount of development in the proposed Project in addition to the RHNA assignments from other communities. These impacts are identified in Chapter 19, Utilities as Impacts 19-2a through 19-2c plus 19-3a and 19-3b. To address these impacts to service providers, this alternative would remove housing sites from the districts of water and wastewater service providers that do not have the ability to serve numerous new connections, and the County would need to relocate them to areas closer to the City-Centered/Baylands Corridor where water providers have more capacity to serve new development (see Table 19-2 in the utilities chapter).

Water service providers that would be adversely impacted by the cumulative buildout scenario are identified in Chapter 19, Table 19-2, which shows “Remaining Distribution Capacity after Development of County ‘Proposed Project’ and other City and Town RHNAs” as either zero or at a deficit. The location of these districts is shown in Figure 19-1 Water Service Districts and Providers. These providers are:

#### **Water Service Providers:**

North Marin Water District (NMWD)

North Marin Water District – West Marin Service Area

Bolinas Community Public Utility District (BCPUD)

Inverness Public Utility District (IPUD)

Chapter 19, Utilities, states that the NMWD Novato Service Area is under an emergency water conservation ordinance which prohibits new water service connections except under limited conditions (NMWD Emergency Ordinance 41). NMWD West Marin Service Area also operates under an emergency water conservation ordinance which prohibits new water service connections (NMWD Emergency Ordinance 39). The BCPUD has had a moratorium on new water connections that has been in effect since 1971. The IPUD water system was designed to serve 600 residential unit equivalents (RUE) based upon recommendations made in 1986. As of 2022, IPUD is committed to providing water service to 625 RUEs, which is 25 RUEs beyond the 1986 design capacity.

Wastewater service providers that would be adversely impacted by the Project and cumulative buildout scenario are identified in Chapter 19, Table 19-10 Remaining Treatment Capacity After Development. The location of these districts is shown in Figure 19-2 Sanitary Sewer Service Districts and Providers. These providers are:

**Wastewater Service Providers:**

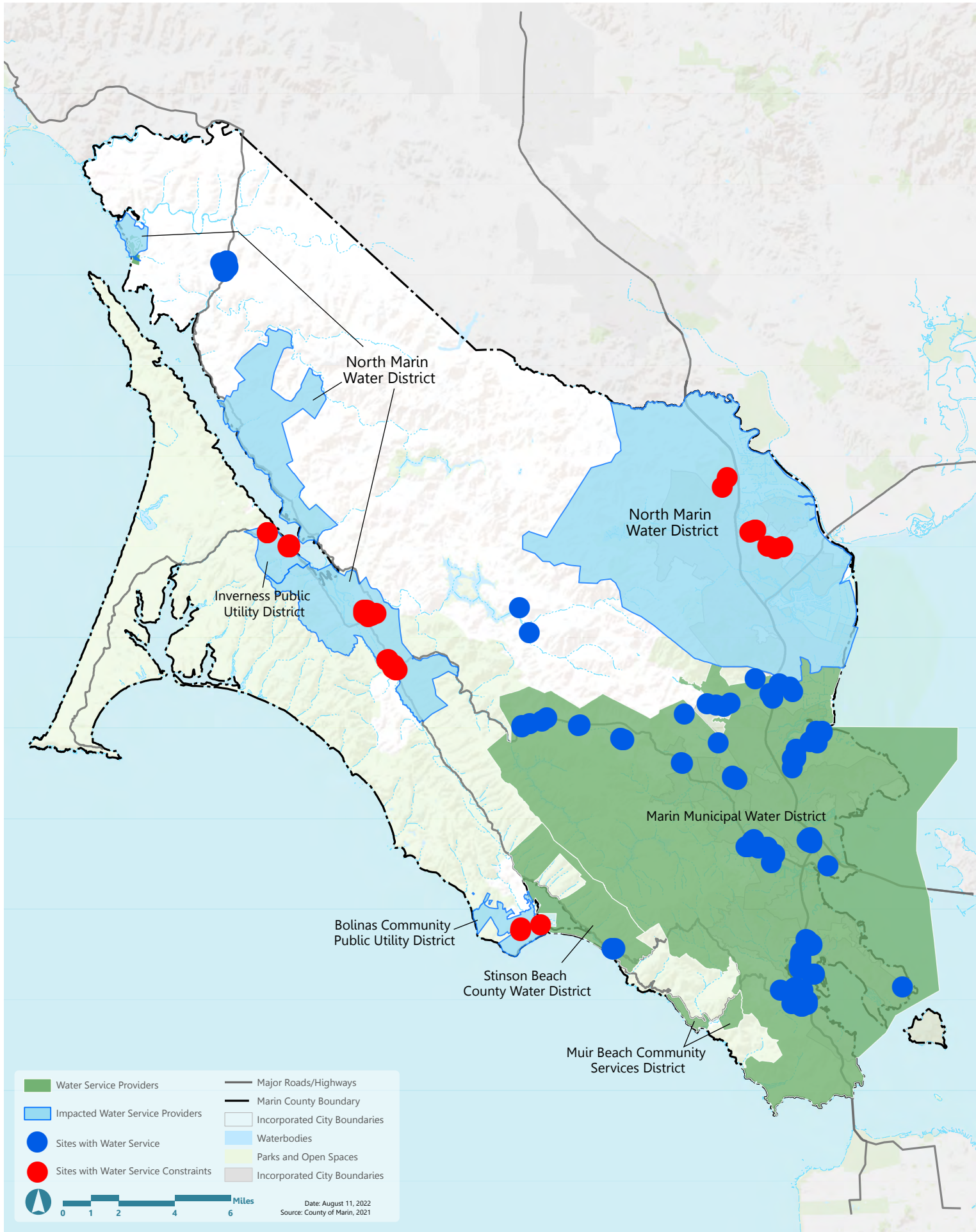
Bolinas Community Public Utility District (BCPUD)

Tomales Village Community Services District (TVCSO)

The BCPUD, has a moratorium on new sewer connections that has been in effect since 1985, while the TVCSO does not have treatment plant capacity to serve new development.

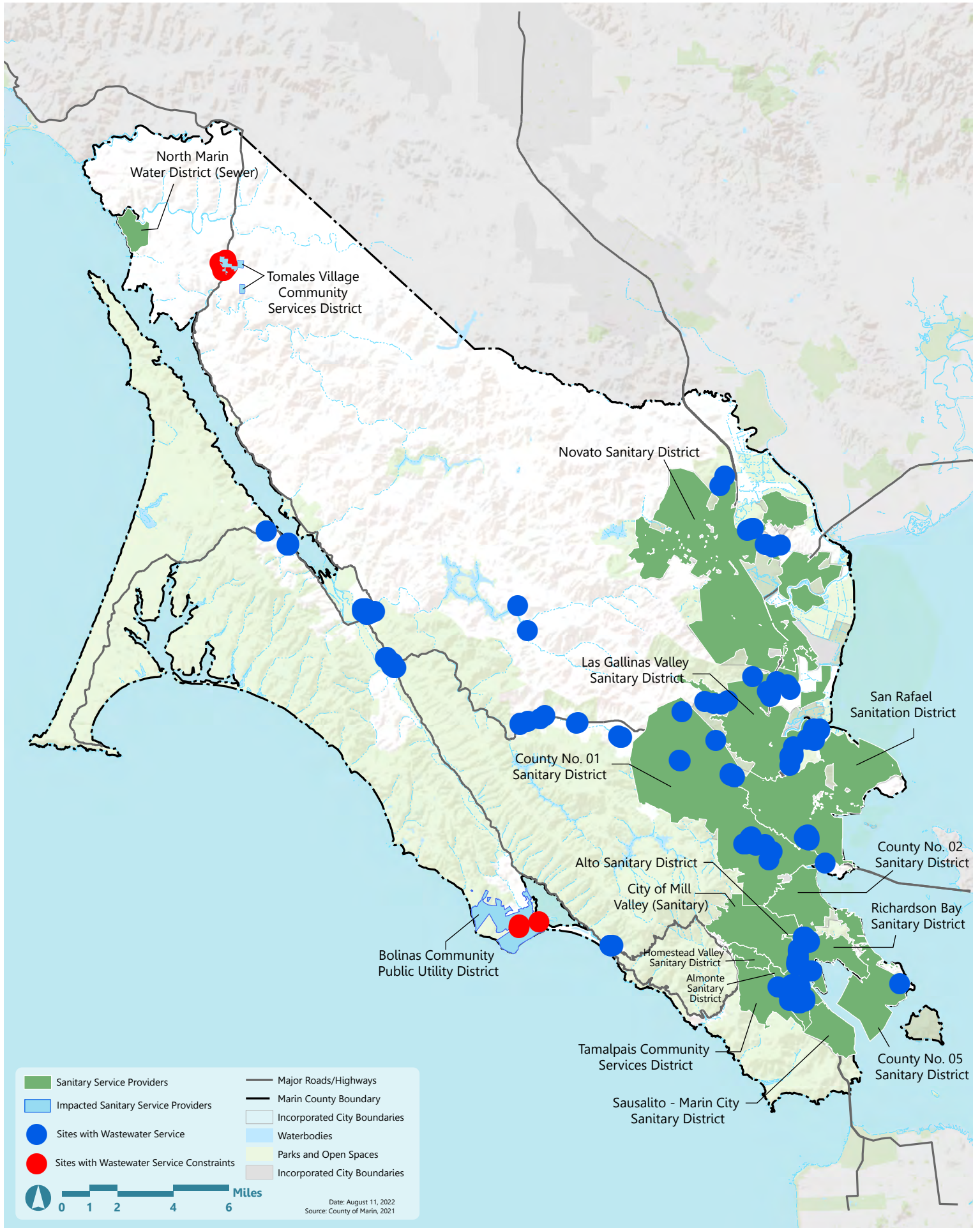
To meet the RHNA requirements (3,569 residential units), 766 housing units would need to be relocated out of severely constrained service provider boundaries to locations where water and sewer providers have greater capacity to serve new development. The County could relocate the units to other Housing Inventory sites located in in-fill areas that have the capacity for increased density, such as the Juvenile Hall and St. Vincent's. See Figure 22-2 for housing sites located within a water service provider's service area with insufficient water service and Figure 21-3 for housing sites located within a wastewater treatment service provider's service areas that has insufficient wastewater treatment capacity. The blue dots on Figure 22-2 and Figure 22-3 indicate housing sites that are within a service district that does not have capacity to serve them.

Table 22-2 lists 766 units that would need to be relocated to areas that have greater water service capabilities and 130 units that would need to be relocated outside of the boundaries of wastewater service providers that do not have capacity for new connections. In total, this alternative would result in the need to relocate 896 units. This Alternative identifies units to be relocated to other areas of the unincorporated County with a greater ability to serve new development, but it does not identify specific sites where the relocated housing units could be accommodated. Should the County select this alternative as the environmentally preferred alternative and adopt it instead of the proposed Project, the County would then begin the process of identifying which sites of the already identified Project sites presented in Table 3-3 in Project Description could accommodate them. The identified housing sites with the most likely capability to absorb the 896 units would be St. Vincent's, Juvenile Hall, and possibly the Buck sites.



**Figure 22.2 - Reduced Utility Impact (Water Service Alternative)**





**Figure 22.3 - Reduced Utility Impact (Wastewater Service Alternative)**

**Table 22-2:  
 Housing Site Removed from Utility Services Providers**

<b>Water and Sanitary Service District Impacts - Inability to Serve Proposed Project</b>	
<b>Number of Units Removed from Water Districts:</b>	<b>Units</b>
<b>North Marin Water District</b>	
9840 State Route 1	10
54 B Street	25
10002 State Route 1	10
125-180-79 (Redwood Highway)	24
761 Atherton Avenue	4
275 Olive Avenue	53
125-180-85 (Redwood Highway)	225
9870 State Route 1	5
100 Commodore Webster Drive	50
11445 State Route 1	3
119-203-03 (Mesa Road)	2
119-203-01 (Mesa Road)	2
10189 State Route 1	24
60 Fifth Street	17
777 Atherton Avenue	38
9950 Sir Francis Drake Boulevard	11
9 Giacomini Road	32
9 Giacomini Road	5
300 Olive Avenue	0
510 Mesa Road	24
520 Mesa Road	0
11445 State Route 1	0
10189 State Route 1	0
10189 State Route 1	0
10189 State Route 1	0
791 Atherton Avenue	50
805 Atherton Avenue	55
300 Olive Avenue	58
	<b>727</b>
<b>Bolinas Community Public Utility District</b>	
31 Wharf Road	8
430 Aspen Road	2
534 Overlook Drive	2
	<b>12</b>
<b>Inverness Public Utility District</b>	
45 Balmoral Way	0
20 Balmoral Way	2
55 Balmoral Way	2
112-143-09 (Balmoral Way)	0
10 Balmoral Way	0
30 Balmoral Way	2
50 Balmoral Way	2
60 Balmoral Way	2

**Table 22-2:  
Housing Site Removed from Utility Services Providers**

<b>Water and Sanitary Service District Impacts - Inability to Serve Proposed Project</b>	
<b>Number of Units Removed from Water Districts:</b>	<b>Units</b>
40 Balmoral Way	2
13270 Sir Francis Drake Boulevard	0
13270 Sir Francis Drake Boulevard	13
75 Balmoral Way	2
	27
<b>Total number of units to be removed</b>	<b>766</b>
<b>Project Site Inventory</b>	<b>5,214</b>
<b>Number of units remaining, including ADUs (5,214 – 766)</b>	<b>4,704</b>
<b>RHNA</b>	<b>3,569</b>
<b>Number of Units Removed from Sanitary District</b>	
<b><i>Bolinas Community Public Utility District</i></b>	
31 Wharf Road	8
430 Aspen Road	2
534 Overlook Drive	2
	12
<b><i>Tomales Village Community Services District</i></b>	
26825 State Route 1	0
102-075-06 (Shoreline Highway)	6
102-075-07 (Shoreline Highway)	2
95 John Street	0
102-062-01 (Dillon Beach Road)	4
29 John Street	5
102-080-19 (State Route 1)	35
102-080-10 (State Route 1)	14
102-080-20 (State Route 1)	9
102-075-02 (Shoreline Highway)	5
290 Dillon Beach Road	13
26825 State Route 1	13
27235 State Route 1	3
200 Valley Avenue	6
27275 State Route 1	3
	118
<b>Total number of units to be removed</b>	<b>130</b>
<b>Project Site Inventory</b>	<b>5,214</b>
<b>Number of units remaining, including ADUs (5,214 – 130)</b>	<b>5,084</b>
<b>RHNA</b>	<b>3,569</b>
Source: MIG,	

**Housing Sites Requiring Substantial Utility Infrastructure Improvements**

Some housing sites identified in the proposed Housing Element Update would require substantial infrastructure improvements (e.g., utility pipelines, pump stations, water tanks, expanded wastewater treatment plants), the construction of which would cause environmental impacts. Chapter 19 Utilities discussion of Impacts 19-1a through 19-1f found that the construction impacts of these improvements would likely be reduced to less than significant by compliance with District, County, State, and Federal regulations, plus adopted standards for development and construction of water and wastewater treatment system infrastructure and facilities. However, these large utility infrastructure improvement projects would cause short-term construction impacts at a minimum and may have more long-term environmental impacts requiring project-specific mitigation, the details of which are not yet known. These substantial infrastructure improvements would require planning, design, and funding, which may prove difficult to achieve during the eight-year housing cycle. It is also possible that the necessary infrastructure improvements would affect the economic feasibility of housing construction on these sites, and therefore reduce the likelihood of their development.

The housing sites that require substantial infrastructure improvements are identified in Chapter 19 Tables 19-3 to 19-7 (water infrastructure improvements) and Tables 19-11 to 19-21 (wastewater infrastructure improvements), and are listed below in Table 22-3. Figure 22-4 shows the locations of these sites.

**Table 22-3:  
Housing Sites with Significant Infrastructure Improvements (Water & Wastewater)**

Address	Number of Potential Units	Infrastructure Needs
275 Olive Ave	53	2700 feet main extension.
300 Olive Ave	58	
<b>Olema</b>		
10189 State Route 1	24	Pump station, 80,000 gal storage tank. Proposed development may trigger upgrades to the Point Reyes Treatment Plant. Many of the distribution lines are undersized and looping is lacking in the Olema area.
9840 State Route 1	10	Pump station, 250,000 gal storage tank
13271 Sir Francis Drake	0	
10 Balmoral Way	0	Water main is only 2” diameter and there are no fire hydrants. Need 550 feet of main upgrade. A Benefit Assessment District would have to be voted into existence by property owners along the street.  Incorporate storage into IPUD district facilities and district-wide upgrades for design capacity. Confirmation that water source has supply to draw from.
112-143-09 (Balmoral Way)	0	
20 Balmoral Way	2	
30 Balmoral Way	2	
40 Balmoral Way	2	
45 Balmoral Way	0	
50 Balmoral Way	2	
55 Balmoral Way	2	
60 Balmoral Way	2	
75 Balmoral Way	2	
275 Olive Ave <sup>1</sup>	53	
300 Olive Ave <sup>1</sup>	58	
11 Harbor Dr	0	
1 Olema Bolinas Rd	0	

**Table 22-3:  
Housing Sites with Significant Infrastructure Improvements (Water & Wastewater)**

Address	Number of Potential Units	Infrastructure Needs
32 Wharf Rd	0	Moratorium on new water and sewer connections. Expansion, upgrade would have to be incorporated district-wide into Bolinas Community Public Utility District facilities.
193-020-38 (Mesa Rd)	0	
All candidate parcels	118	Wastewater treatment plant upgrades may be needed to increase treatment capacity before candidate housing sites can be developed.
<b>Total Units Relocated</b>	<b>277</b>	
Proposed Project	5,214	
RHNA	3,569	

Under this Alternative, the County would need to relocate the 277 units to locations that do not have significant infrastructure improvement requirements. If no sites are available to accommodate the 277 units without similar levels construction impacts related to necessary infrastructure improvements (long pipelines, pump stations, additional wastewater treatment plant capacity), the County could eliminate them from the Project Site Inventory (5,214) and still meet RHNA (3,569) and Total Proposed Sites (3,928).

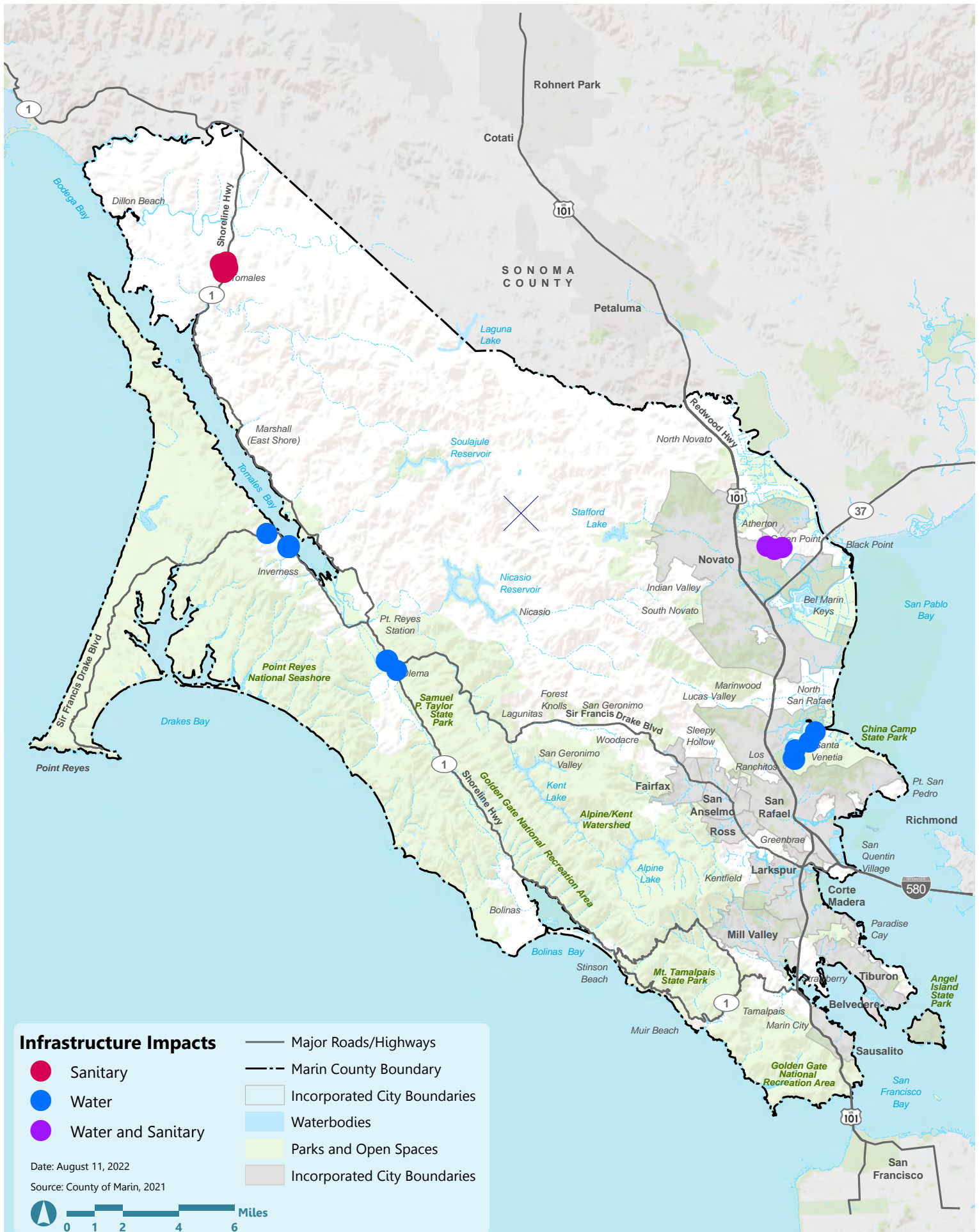
### 22.6.2 Comparison of Impacts

Unless otherwise noted the comparison of impacts focuses on how the alternative would compare to the Housing Element Update portion of the proposed Project, because there would not be any effects of this alternative on the Safety Element Update or its environmental impacts.

A. Aesthetic Resources. The proposed Project was found to have significant and unavoidable impacts with no mitigation available on scenic vistas and existing visual character and quality.

The Reduced Utility Impact Alternative would relocate certain rural housing units to more urban areas within utility service districts with greater ability to serve new development and would result in the removal of housing sites from several small Western Marin water and wastewater utility provider boundaries. The removal of these housing sites from the rural areas of the county would help reduce the potential Project impacts on scenic vistas and existing visual character and quality. *Thus, the Reduced Utility Impact Alternative would have less of an aesthetics impact related to scenic vistas and existing visual character and quality than the proposed Project; however, because it is impossible to determine whether relocation of these housing sites to other approved housing sites would result in a noticeable difference in these impacts, the proposed Project and the Reduced Utility Impact Alternative are assumed to have similar (same type and degree of) impact on scenic vistas and existing visual character and quality.*

B. Agriculture & Forestry. Some housing sites are proposed for parcels (or parts thereof) that are designated Farmland of Local Importance or on Grazing Land, and therefore could result in the conversion or change in farmland to non-agricultural use. Project compliance with adopted CWP policies and County agricultural and resource-related districts regulations would ensure that any potential impacts related to the conversion or change in farmland to non-agricultural use from future development facilitated by the Project would be less-than-significant.



**Figure 22.4 - Sites with Infrastructure Impacts**

Several of the sites that would be relocated under the Reduced Utility Impact Alternative are on the parcels with either a Farmland of Local Importance or Grazing land designation in the Olema and Point Reyes Station areas. *Thus, Reduced Utility Impact Alternative would have fewer impacts on agricultural resources than the proposed Project.*

C. Air Quality. The proposed Housing Element Update would have significant unavoidable impacts even with mitigation for Impact 6-1: Conflict with the Local Air Quality Plan and Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Operational), Impact 6-2: Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Construction) and Impact 6-3: Generate Toxic Air Contaminant Emissions that Expose Sensitive Receptors to Substantial Pollutant Concentrations During Construction.

The Reduced Utility Impact Alternative would relocate housing units in the North Marin Water District – West Marin Service Area, Bolinas Community Public Utility District, Inverness Public Utility District, and the Tomales Village Community Services District. These service districts are in the more rural areas of the County and these sites would likely generate VMT above the average per capita VMT (see Transportation discussion under the Reduced VMT Alternative). Relocating these housing sites closer to the Hwy 101 Corridor would be expected to reduce VMT from the new housing units and thus air quality emissions associated with vehicle transportation. See discussion under Reduced VMT Alternative on how relocating units closer to the Hwy 101 Corridor would reduce VMT.

*The Reduced Utility Impacts Alternative would have less air emissions as compared to the proposed Project because of the expected reduction in VMT.*

D. Biological Resources. The biological resource impact analysis for the proposed Project determined that all biological resource impacts would be less than significant with mitigation. *Although the Reduced Utility Impact Alternative would relocate some rural housing sites, which would avoid biological resources impacts to those sites, the biological resources impact of this alternative would be similar (same type and degree of impact) to those of the proposed Project because it still contains housing sites that contain or are adjacent to biological resources.*

E. Cultural and Historical Resources. The proposed Housing Element Update would have a significant unavoidable impact on historic resources. Impacts to archaeological and cultural resources from implementation of the Project would be less than significant with mitigation. *The Reduced Utility Impact Alternative would have similar impacts to historic resources as the proposed Project.*

F. Geology and Soils. The geologic impact analysis of the proposed Housing Element Update found that all geologic impacts would be less than significant with mitigation. *The Reduced Utility Impact Alternative would relocate certain rural housing sites to other already proposed sites. Therefore, it is assumed that this alternative would have similar geologic impacts as the proposed Project because development under the proposed Project or the Reduced Utility Impact Alternative would occur on the same identified housing sites in accordance with state and County requirements for seismic safety and County requirements for geotechnical design.*

G. Greenhouse Gas Emissions and Energy. The GHG impact analysis determined that the proposed Project would have a significant unavoidable impact, even with mitigation, from Impact 10-1: Generate Significant Greenhouse Gas Emissions and Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purposes of Reducing Greenhouse Gas Emissions. The GHG impacts are partially attributable to the VMT per capita the Project would generate.

The Reduced Utility Impact Alternative would reduce the number of housing sites in the more remote, rural parts of the county where VMT per capita is estimated to be the highest and relocate them closer to the Hwy 101 Corridor which would generate less VMT per capita and therefore less GHG emissions (see VMT discussion under the Reduced VMT Alternative). This reduction in GHG emissions would not be substantial, and the impact would remain significant and unavoidable. *The proposed Project and the Reduced Utility Impact Alternative would have similar GHG impacts.*

H. Hazards and Hazardous Materials. The hazards analysis of the proposed Project found all impacts to be less than significant. *The proposed Project and the Reduced Utility Impact Alternative would have similar hazards and hazardous materials impacts.*

I. Hydrology and Water Quality. The hydrology impact analysis of the proposed Project determined that all impacts to hydrology and water quality would be less than significant. *The Reduced Utility Impact Alternative would relocate some housing sites in rural areas of the County closer to the City-Center-Baylands Corridor and would have similar impacts to hydrology and water quality as the proposed Project.*

J. Land Use and Planning. The EIR land use and planning analysis of the proposed Project found all impacts to be less than significant. The Project would not physically divide an established community or conflict with any adopted plan, policy, or regulation for the purpose of avoiding or mitigating environmental effects. New policies in the Safety Element would have a beneficial effect on land use planning and safety. Any development constructed under either this Alternative or the proposed Project would be subject to adopted General Plan, zoning, and development review standards and processes, as well as with adopted regional plans (e.g., for air quality, GHG, transportation). *Therefore, the proposed Project and the Reduced VMT Alternative would have similar land use and planning impacts.*

K. Noise. The noise impact analysis for the proposed Project identified Impact 15-1: Substantial Permanent Increases in Traffic Noise Levels as significant and unavoidable with no mitigation available, based on the conservative modeling assumptions made for the impact analysis (see Chapter 15 for discussion of modeling assumptions). The Project could result in a substantial permanent change in traffic noise levels in areas already affected by high noise levels that exceed County guidelines for noise and land use compatibility. *Because the proposed Project and the Reduce Utility Impact Alternative would have a similar number of housing units, they would have similar significant unavoidable impacts from a permanent increase in traffic noise levels.*

L. Population and Housing. The impact analysis for the proposed Project found that the Project would have less than significant impacts on population and housing, especially because the most recent State CEQA Guidelines Appendix G population question, which was updated since the 2014 Addendum to the 2013 Marin County Housing Element Supplement to the 2007



*Countywide Plan EIR* for the 2015-2023 Housing Element was adopted, now refers to **unplanned** population growth. As discussed in this EIR (e.g., Chapter 16, Population and Housing), planned population growth in itself is not considered a significant environmental impact, but planned population growth still can result in impacts on other environmental areas. The proposed Housing Element Update would result in significantly more population growth within unincorporated Marin County than under the existing 2015-2023 Housing Element.

*This alternative would relocate housing units to other locations in the county, but it would have a similar number of units as the proposed Project, and the indirect impacts related to population and housing would be similar to the proposed Project's.*

**M. Public Services (including Recreation).** The impact analysis for the proposed Project determined the Project would have less than significant impacts on public services. *The Reduced Utility Impact Alternative would relocate certain housing sites from rural areas to other areas of the County, but because the overall number of housing units would remain the same as the proposed Project, the impacts to public services would be similar.*

The proposed Project would have less than significant impacts on recreation facilities. *Because the Reduced Utility Impacts Alternative would have a similar number of housing units as the proposed Project, it would have similar impacts to recreation facilities.*

**N. Transportation.** The Reduced Utility Impact Alternative would relocate certain rural housing units to more urban areas within utility service districts with greater ability to serve new development. Because these districts are generally closer to the more urban areas of the county, relocating rural housing sites would reduce the VMT per capita (see VMT discussion in the Reduced VMT Alternative). However, this reduction would not be substantial, and the VMT impact would remain significant and unavoidable. *This alternative would slightly reduce VMT from that generated by the proposed Project.*

**O. Utilities and Service Systems.** The purpose of the Reduced Utility Impact Alternative is to reduce the significant unavoidable utilities impacts in utility service districts that lack sufficient capacity for additional housing. *Therefore, the alternative would have fewer impacts on utility service providers than the proposed Project.*

**P. Wildfire.** Although the Reduced Utility Impact Alternative would relocate certain housing sites in rural areas to other more urban areas of the county, these sites may also be in wildfire hazard severity zones. *For this reason, the Reduce Utility Impact Alternative is considered to have the same wildfire hazard as the proposed Project.*

### **21.6.3 Ability to Meet of Basic Project Objectives**

The Reduced Utility Alternative would eliminate the significant unavoidable impacts to water and wastewater service providers that do not have the ability to serve the level of new development proposed by the Housing Element Update. It also identifies sites that would require significant infrastructure improvements that could be either relocated to avoid significant construction impacts. Because the housing units would be relocated to other areas of the county where utility providers have greater capacity to serve new development, the alternative would meet all

the project objectives except for the goal of facilitating new housing growth throughout the unincorporated county, similar to the Reduced VMT Alternative.

The Housing Element proposes housing sites in West Marin and the rural parts of the County to meet the housing needs of those communities and to provide housing opportunities close to jobs in the rural areas. Providing housing in West Marin and the rural areas of the County may increase VMT as shown in the Transportation chapter of this EIR. However, adding housing to the more remote areas of the County may also provide new opportunities for people working in these areas to live nearer where they work, thereby reducing VMT travel, and the resulting air quality and GHG impacts, from that segment of the population. The County has a stated objective of providing additional housing throughout the unincorporated county communities. This alternative would eliminate housing in the Bolinas, Tamales Bay, and Inverness areas of the County, as shown on Figures 21-2 and 21-3. For this reason, this Alternative would not fully meet the County's objective to provide housing throughout the unincorporated County.

The Reduced Utility Alternative would not hinder the County's ability to meet all Safety Element objectives.

## **22.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

State CEQA Guidelines (Section 15126.6[e][2]), "If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives."

Alternative 1, the No Project Alternative, is not the environmentally superior alternative. While it would have reduced levels of impacts compared to the proposed Project in a number of resource areas (see Table 22-4, below) because it would result in fewer housing units being constructed, it would have increased environmental hazard impacts because the Safety Element Update would not be adopted, and the County would not have policy direction for climate change and resiliency, sea level rise, and wildfire hazard planning.

Alternative 2, the Reduced VMT Alternative, would facilitate development of 4,735 units (including density bonus units and ADUs), which would meet the County's RHNA (3,569 units) and the Total Proposed Sites as listed in Table 3-2 in Project Description (3,928 units), but would not facilitate development of the number of units included in the proposed Project (5,214 units) unless those sites could be successfully relocated to sites within the Hwy 101 corridor. The Reduced VMT Alternative, is the environmentally superior alternative because it would reduce the Project per capita VMT, and the resulting air quality and GHG emissions by 10 to 15%. This would lower the VMT associated with the proposed Project and result in reduced impacts from the proposed Project; however, the VMT, air quality, and GHG impacts would remain significant and unavoidable.

Alternative 3, Reduced Utility Impact Alternative, would eliminate the Project's impacts on water and wastewater service providers that do not have the ability to serve the amount of new housing proposed in the Housing Element Update. While the Reduced Utility Impact Alternative has fewer impacts than the proposed Project, it is not identified as the Environmentally Superior Alternative because Alternative 2, Reduced VMT, reduces more impacts (VMT, Air Quality, and GHG).

**Table 22-4:  
Comparison of Project and Alternative Significant Impacts**

<b>Impact</b>	<b>Proposed Project</b>	<b>Alternative 1 - No Project Alternative</b>	<b>Alternative 2 – Reduced VMT Alternative</b>	<b>Alternative 3 – Reduced Utility Impact (Water &amp; Wastewater)</b>
<b>Aesthetics</b>				
Impact 4-1: Effects on Scenic Vistas.	HE: Significant Unavoidable (SU), with no mitigation available  SE: LTS	Reduced <sup>1</sup> impact because of fewer housing units	Reduced impact because housing would be moved to more urban areas of the County	Similar <sup>2</sup> to proposed Project
Impact 4-2: Impacts on Existing Visual Character and Quality.	HE: SU, with no mitigation available  SE: LTS	Reduced impact because of fewer housing units	Similar to proposed Project	Similar to proposed Project
<b>Air Quality</b>				
Impact 6-1: Conflict with the Local Air Quality Plan and Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Operational).	HE:SU even with MM 6-1 referencing the VMT mitigation measure MM 18-4  SE: No Impact	Less impact because of fewer housing units	Less impact because housing would be concentrated in the Hwy 101 Corridor and removed from rural areas that generate greater VMT than more urban areas	Somewhat less of an impact because some housing would be removed from rural areas that generate greater VMT than more urban areas
Impact 6-2: Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Construction).	HE: SU even with MM 6-2: Evaluate Air Quality Impacts of Proposed Projects and Plans  SE: No Impact	Less impact because of fewer housing units	Less impact because housing would be concentrated in the Hwy 101 Corridor and removed from rural areas that generate greater VMT than urban areas	Somewhat less impact because some housing would be removed from certain rural areas that generate greater VMT than more urban areas
Impact 6-3: Generate Toxic Air Contaminant Emissions that Expose Sensitive Receptors to Substantial Pollutant Concentrations During Construction.	HE: SU, even with MM 6-3 which refers to MM 6-2  SE: No Impact	Less impact because of fewer housing units	Similar to proposed Project	Similar to proposed Project

**Table 22-4:  
 Comparison of Project and Alternative Significant Impacts**

<b>Impact</b>	<b>Proposed Project</b>	<b>Alternative 1 - No Project Alternative</b>	<b>Alternative 2 – Reduced VMT Alternative</b>	<b>Alternative 3 – Reduced Utility Impact (Water &amp; Wastewater)</b>
<b>Biological Resources</b>				
Impact 7-1: Impacts to Special-Status Species	HE: LTS  SE: LTS with implementation of MM 7-1	Less impact because of fewer housing units	Similar to proposed Project	Similar to proposed Project
Impact 7-2: Impacts on Riparian Habitat, Sensitive Natural Communities, and Wetlands	HE: LTS  SE: LTS with implementation of MM 7-2	Less impact because of fewer housing units	Similar to proposed Project	Similar to proposed Project
Impact 7-3: Impacts on Wildlife Movement Corridors and Wildlife Nursery Sites	HE: LTS with implementation of MM 7-3.1 and 7-3.2  SE: LTS with implementation of MM 7-3.3	Less impact because of fewer housing units	Similar to proposed Project	Similar to proposed Project
<b>Cultural/Tribal Cultural Resources</b>				
Impact 8-1: Destruction/Degradation of Historical Resources	HE/SE: If County can successfully implement MM 8-1a and MM 8-1b then impact is reduced to LTS. If County cannot successfully implement MM 8-1a and 8-1b and must implement MM 8-1c - f, then uncertainty about ability to successfully implement mitigation means impact	Reduced impact because of fewer housing units	Similar to proposed Project	Similar to proposed Project

**Table 22-4:  
Comparison of Project and Alternative Significant Impacts**

<b>Impact</b>	<b>Proposed Project</b>	<b>Alternative 1 - No Project Alternative</b>	<b>Alternative 2 – Reduced VMT Alternative</b>	<b>Alternative 3 – Reduced Utility Impact (Water &amp; Wastewater)</b>
	is significant and unavoidable.			
<b>GHG/Energy</b>				
Impact 10-1: Generate Significant Greenhouse Gas Emissions and Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purposes of Reducing Greenhouse Gas Emissions.	HE: SU even with implementation of MM 10-1A – 10-1C  SE: No Impact	Less impact because of fewer housing units	Less impact because housing would be concentrated in the Hwy 101 Corridor and removed from rural areas that generate greater VMT than urban areas	Somewhat less of an impact because some housing would be relocated from certain rural areas that generate greater VMT to more urban areas that generally generate less VMT per capita
<b>Noise</b>				
Impact 15-1: Substantial Permanent Increases in Traffic Noise Levels	HE: SU, even with adoption of MM 18-4 that requires future residential development projects to achieve a 15% reduction in VMT  SE: No Impact	Less impact because of fewer housing units	Similar to proposed Project	Similar to proposed Project
<b>Transportation</b>				
Impact 18-4: Impacts Related to Vehicle Miles Traveled	HE: SU even with adoption of MM18-4 Measures to reduce VMT  SE: No impact	Less impact because of fewer housing units	Would significantly reduce VMT over proposed Project because housing would be relocated to the City-Centered/Bayshore Corridor	Somewhat less than proposed Project
Impact 18-6: Emergency Access	HE: LTS	HE: Similar to proposed Project	Similar to proposed Project	Similar to proposed Project

**Table 22-4:  
 Comparison of Project and Alternative Significant Impacts**

<b>Impact</b>	<b>Proposed Project</b>	<b>Alternative 1 - No Project Alternative</b>	<b>Alternative 2 – Reduced VMT Alternative</b>	<b>Alternative 3 – Reduced Utility Impact (Water &amp; Wastewater)</b>
	SE: Would have beneficial effect from new Safety Element Policy EH-5.2 that calls for the County to ensure adequate fire protection and evacuation routes are provided; Implementing Program EHS-2.4.e requires new developments to provide adequate ingress/egress for emergency access and evacuation purposes; Implementing Program EHS-5.3.b calls for the fire department to review proposed roadways to ensure that County and State standards ensuring adequate fire protection are met.	SE: Does not have beneficial effect of new Safety Element policies		
<b>Utilities and Service Systems</b>				
Impact 19-2a: Project and Cumulative Water Supply Impacts: West Marin Community Service Districts and North Marin Water District - West Marin	HE: SU with no feasible mitigation  SE: No Impact	Less impact because of fewer housing units	Less impact because housing would be concentrated in the City-Centered / Baylands Corridor and removed from West Marin Community Service Districts	Less impact because housing would be removed from water service districts that do not have the capacity to serve new development

**Table 22-4:  
Comparison of Project and Alternative Significant Impacts**

<b>Impact</b>	<b>Proposed Project</b>	<b>Alternative 1 - No Project Alternative</b>	<b>Alternative 2 – Reduced VMT Alternative</b>	<b>Alternative 3 – Reduced Utility Impact (Water &amp; Wastewater)</b>
Impact 19-2b: Project and Cumulative Water Supply Impacts: Water Districts	HE: SU with no feasible mitigation  SE: No Impact	Less impact because of fewer housing units but likely still SU	Less impact because housing would be concentrated in the City-Centered / Baylands Corridor and removed from rural water districts that do not have the capacity to serve new development	Similar to proposed Project (Alt. 3 doesn't propose to relocate housing sites out of larger water districts)
Impact 19-2c: Project and Cumulative Water Supply Impacts: Individual Water Supply Systems	HE: SU with no feasible mitigation  SE: No Impact	Less impact because of fewer housing units likely still SU	Less impact because housing would be concentrated in the City-Centered / Baylands Corridor within utility service district boundaries.	Similar to proposed Project
Impact 19-3a: Wastewater Treatment Capacity Impacts: Community Service Districts Providing Sewage Treatment	HE: with no feasible mitigation  SE: No Impact	Less impact because of fewer housing units but likely still SU	Less impact because housing would be concentrated in the City-Centered / Baylands Corridor and removed from rural wastewater treatment districts that do not have the capacity to serve new development	Less impact because housing would be removed from wastewater treatment districts that do not have the capacity to serve new development
Impact 19-3b: Wastewater Treatment Capacity Impacts: Sanitary Districts	HE: SU with feasible mitigation  SE: No Impact	Less impact because of fewer housing units but likely still SU	Less impact because housing would be concentrated in the City-Centered / Baylands Corridor and removed from rural wastewater	Less impact because housing would be concentrated in the City-Centered / Baylands Corridor and removed from rural wastewater

**Table 22-4:  
 Comparison of Project and Alternative Significant Impacts**

<b>Impact</b>	<b>Proposed Project</b>	<b>Alternative 1 - No Project Alternative</b>	<b>Alternative 2 – Reduced VMT Alternative</b>	<b>Alternative 3 – Reduced Utility Impact (Water &amp; Wastewater)</b>
			treatment districts that do not have the capacity to serve new development	treatment districts that do not have the capacity to serve new development
Impact 19-3c: Wastewater Treatment Capacity Impacts Outside of Sanitary Districts and Community Service Districts Providing Sewage Treatment	HE: SU, with no feasible mitigation  SE: No Impact	Less impact because of fewer housing units but likely still SU	Less impact because housing would be concentrated in the City-Centered / Baylands Corridor within wastewater treatment service district boundaries	Similar to proposed Project

HE: Housing Element

SE: Safety Element

LTS: Less Than Significant

SU: Significant Unavoidable

<sup>1</sup> Less impact indicates that the type of impacts identified for the proposed Project are reduced in degree/intensity under the alternative.

<sup>2</sup> Similar Impact indicates the proposed Project and the Alternative have the same type of impacts and similar degree/intensity of impact



## 22.8 REFERENCES

County of Marin. 2020. Marin County Community Wildfire Protection Plan. Available:

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County of Marin. 2014. Draft 2015–2023 Marin County Housing Element, Addendum to the 2012 Draft Marin County Housing Element Supplement to the 2007 Countywide Plan EIR. October 2014.

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## 23. MITIGATION MONITORING AND REPORTING PROGRAM

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CEQA Statute Section 21081.6 and State CEQA Guidelines Section 15097 require a public agency to adopt a reporting or monitoring program (MMRP) to ensure compliance with the mitigation measures adopted by the agency at the time of project approval. A mitigation monitoring program would therefore be required for the Housing & Safety Element Update to the 2007 Marin Countywide Plan EIR to ensure compliance with the mitigation measures that are adopted and incorporated into the project. Adoption of the MMRP would occur at the time of project approval.

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared pursuant to the CEQA Guidelines, which state:

“When adopting a final EIR with findings as required under 14 CCR section 15091(a)(1) the lead agency shall also adopt a program for reporting on or monitoring the changes which it has either required in the project or made a condition of approval to mitigate or avoid significant environmental effects” (§15097(a)); and

“The Lead Agency may choose whether its program will monitor mitigation, report on mitigation, or both. “Reporting” generally consists of a written compliance review that is presented to the decision-making body or authorized staff person. A report may be required at various stages during project implementation or upon completion of the mitigation measure. “Monitoring” is generally an ongoing or periodic process of project oversight. There is often no clear distinction between monitoring and reporting and the program best suited to ensuring compliance in any given instance will usually involve elements of both.” (§15097(c))

Table 23-1 lists the impacts, mitigation measures, and timing of the mitigation measure (when the measure will be implemented) related to the Project. The “Impact” column lists each significant impact, by resource topic, that is identified in the EIR and for which mitigation measures are recommended. The “Mitigation Measure” column provides the full text of each mitigation measure identified in the EIR. The “Monitoring” column describes (1) the “implementation entity” responsible for carrying out each mitigation measure (such a “future project applicant” or “County”); (2) mitigation implementation timing requirements (e.g., at the completion of a particular future individual project development review or construction phase, prior to occupancy, or when some other specific threshold is reached); and (3) the entity responsible for performing the monitoring of each mitigation measure (the “monitoring and verification entity;” e.g., a County department or agency, another public agency, or some other entity).

According to CEQA Guidelines Section 15126.4(a)(2), “Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments. In the case of the adoption of a plan, policy, regulation, or other public project, mitigation measures can be incorporated into the plan, policy, regulation, or project design.” Therefore, all mitigation measures as listed in this MMRP will be adopted by the County when the project is approved.

**Table 23-1:  
 Mitigation Monitoring and Reporting Program**

		MONITORING		
Impact	Mitigation Measure	Implementation Entity	Timing Requirements	Monitoring and Verification Entity
<b>AIR QUALITY</b>				
Impact 6-1: <b>Conflict with the Local Air Quality Plan and Result in a Cumulatively Considerable Net Increase in Criteria Air Pollutants for which the Region is Non-Attainment (Operational).</b>	<b>Mitigation Measure 6-1: Reduce VMT from New Residential Development.</b> Implement Mitigation Measure 18-4 (Transportation).	Project proponent are responsible for submitting documentation that demonstrates how required VMT reductions will be achieved, and for implementing the associated VMT reduction strategies (these will vary but may include implementation of a TDM program and/or physical measures).  County to require regular report on TDM program success.	Prior to issuance of building permit  Initials: _____  Date: _____	Community Development Agency (CDA)

	<p><b>Mitigation Measure 18-4:</b> Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the <i>Technical Advisory on Evaluating Transportation Impacts in CEQA</i>, OPR, 2018 (or subsequent updates), or future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments.</p> <p>For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a major role in most cases. Following are TDM and other strategies that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.</p> <ul style="list-style-type: none"> <li>○ Subsidize resident transit passes</li> <li>○ Provide or participate in established ride-matching program(s)</li> <li>○ Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator</li> </ul>			
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**Table 23-1:  
 Mitigation Monitoring and Reporting Program**

		MONITORING		
Impact	Mitigation Measure	Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	<ul style="list-style-type: none"> <li>○ Complete bus stop improvements or on-site mobility hubs</li> <li>○ Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit</li> <li>○ Reduce parking supply at affordable or senior projects and projects that are well-served by transit</li> <li>○ Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present</li> <li>○ Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)</li> <li>○ Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.</li> </ul>			
<p><b>Impact 6-2: Result in a Cumulatively Considerable Net Increase in Criteria Pollutants for which the Region is Non-Attainment (Construction).</b></p>	<p><b>Mitigation Measure 6-2: Evaluate Air Quality Impacts of Proposed Projects and Plans.</b> The County shall require future projects and plans to evaluate and mitigate, as necessary, potential air quality impacts through Countywide Plan Program AIR-1.b. The text of Countywide Plan Program AIR-1.b states:</p> <p>Evaluate Air Quality Impacts of Proposed Projects and Plans. As part of the Environmental Review Process, use the current BAAQMD CEQA Guidelines to evaluate the significance of air quality impacts from projects or plans, and to establish appropriate minimum submittal and mitigation requirements necessary for project or plan approval.</p>	Project Proponent	<p>Prior to discretionary project approval.</p> <p>Initials: _____</p> <p>Date: _____</p>	<p>County of Marin Community Development Agency, Department of Public Works or other County entity functioning as the CEQA Lead Agency will review projects and plans being proposed for compliance with the language of Countywide Plan Program AIR-1.b presented in this Mitigation Measure.</p>

**Table 23-1:  
Mitigation Monitoring and Reporting Program**

		MONITORING		
Impact	Mitigation Measure	Implementation Entity	Timing Requirements	Monitoring and Verification Entity
<p><b>Impact 6-3: Generate Toxic Air Contaminant Emissions that Expose Sensitive Receptors to Substantial Pollutant Concentrations During Construction.</b></p>	<p><b>Mitigation Measure 6-3: Evaluate Air Quality Impacts of Proposed Projects and Plans.</b> Implement Mitigation Measure 6-2.</p> <p><b>Mitigation Measure 6-2: Evaluate Air Quality Impacts of Proposed Projects and Plans.</b> The County shall require future projects and plans to evaluate and mitigate, as necessary, potential air quality impacts through Countywide Plan Program AIR-1.b. The text of Countywide Plan Program AIR-1.b states:</p> <p>Evaluate Air Quality Impacts of Proposed Projects and Plans. As part of the Environmental Review Process, use the current BAAQMD CEQA Guidelines to evaluate the significance of air quality impacts from projects or plans, and to establish appropriate minimum submittal and mitigation requirements necessary for project or plan approval.</p>	<p>Project Proponent</p>	<p>Prior to discretionary project approval.</p> <p>Initials: _____</p> <p>Date: _____</p>	<p>County of Marin Community Development Agency, Department of Public Works or other County entity functioning as the CEQA Lead Agency will review projects and plans being proposed for compliance with the language of Countywide Plan Program AIR-1.b presented in this Mitigation Measure.</p>
<p><b><i>BIOLOGICAL RESOURCES</i></b></p>				
<p><b>Impact 7-1: Impacts to Special-Status Species.</b></p>	<p><b>Mitigation Measure 7-1:</b> To Protect Special-Status Species During Implementation of Safety Element Activities, Marin County shall implement the following measures listed below:</p> <p>All projects undertaken while carrying out Safety Element implementation programs shall be required to conduct a <i>biological resources site assessment</i>, prepared by a qualified biologist, to determine whether the project will result in significant biological impacts. The assessment shall be submitted to the County for review as part of the discretionary permit approval process.</p>	<p>County and Project Proponents</p>	<p>Prior to project approval.</p> <p>Initials: _____</p> <p>Date: _____</p>	<p>County of Marin Community Development Agency, Department of Public Works or other County entity functioning as the project proponent.</p>

**Table 23-1:  
 Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	MONITORING		
		Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	<p>The biological resources site assessment shall include the following:</p> <ul style="list-style-type: none"> <li>• The presence or absence of any sensitive biological resources that could be affected by proposed activities, including occurrences of special-status species, occurrences of sensitive natural communities, jurisdictional wetlands, and important wildlife nursery areas and movement corridors;</li> <li>• Recommendations for protocol-level surveys if necessary to determine presence or absence of special-status animal or plant species, as needed;</li> <li>• Impact assessment of the proposed activities on sensitive biological resources;</li> <li>• Mitigation measures for avoidance of harm or removal of sensitive biological resources (e.g., avoidance of sensitive biological periods such as the bird and bat breeding season and bat winter torpor season), and compensation for the loss of sensitive biological resources such that there is no net loss of sensitive habitat acreage, values, and function.</li> </ul> <p>The County shall review the results of the biological resources site assessment to determine whether impacts to Special-Status Species are likely to occur and the actions needed to avoid identified impacts, as well as to determine if additional County permits are required, and the appropriate level of CEQA review.</p>			



**Table 23-1:  
Mitigation Monitoring and Reporting Program**

		MONITORING		
Impact	Mitigation Measure	Implementation Entity	Timing Requirements	Monitoring and Verification Entity
<p><b>Impact 7-2: Impacts on Riparian Habitat, Sensitive Natural Communities, and Wetlands.</b></p>	<p><b>Mitigation Measure 7-2.1: Best Management Practices for vegetation management in riparian areas, wetlands, and sensitive natural communities.</b> For fire safety implementation projects (e.g., fuel load reduction) of any size where sensitive biological resources may occur, the County and/or contractors shall prepare a Construction Management Plan (CMP) for projects that involve vegetation removal within or in proximity to riparian areas, wetlands, and sensitive natural communities. The CMP shall include Best Management Practices (BMPS) that protect these habitats. The CMPs may include, but are not limited to, the following BMPs:</p> <ul style="list-style-type: none"> <li>• Setbacks from riparian areas, wetlands, and other sensitive areas where work should be avoided.</li> <li>• Field delineation of sensitive habitats as Environmentally Sensitive Areas to avoid.</li> <li>• Identification of sensitive areas where work should be done by hand rather than with heavy machinery</li> <li>• Measures to control and prevent the discharge of potential pollutants, including solid wastes, paints, concrete, petroleum products, chemicals, wash water or sediment and non-stormwater discharges to storm drains and water courses.</li> <li>• Restrictions on cleaning, fueling, or maintaining vehicles on site, except in a designated area in which run-off is contained and treated.</li> <li>• Erosion control measures for wet season work (October 15 through April 15).</li> </ul>	<p>County and Project Proponents</p>	<p>Prior to building permit approval.</p> <p>Initials: _____</p> <p>Date: _____</p>	<p>County</p>

**Table 23-1:  
 Mitigation Monitoring and Reporting Program**

		MONITORING		
Impact	Mitigation Measure	Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	<ul style="list-style-type: none"> <li>Measures to store, handle, and dispose of construction materials and wastes properly, so as to prevent their contact with stormwater.</li> <li>Measures to avoid the invasion and/or spread of noxious weeds.</li> </ul>			
<b>Impact 7-3: Impacts on Wildlife Movement Corridors and Wildlife Nursery Sites.</b>	<p><b>Mitigation Measure 7-3.1. Revise Definition of the Nesting Season</b></p> <p>Adopted Policy BIO-2.5 in the Natural Systems and Agriculture Element of the 2007 CWP defines the avian nesting season as March 1 through August 1. However, the nesting season in Marin County is generally defined as February 1 through August 31. Unless this policy is amended, future individual development projects resulting from the Housing Element Update have the potential to take active nests of birds protected by the Migratory Bird Treaty Act and California Fish and Game Code. Therefore, the County shall revise this policy as follows:</p> <p><b>Policy BIO-2.5 (revised)</b> Restrict Disturbance in Sensitive Habitat During the Nesting Season. Limit construction and other sources of potential disturbance in sensitive riparian corridors, wetlands, and Baylands to protect bird nesting activities. Disturbance should generally be set back from sensitive habitat during the nesting season from <u>February 1 through August 31</u> to protect bird nesting, rearing, and fledging activities. Preconstruction surveys should be conducted by a qualified professional where development is proposed in sensitive habitat areas during the nesting season, and appropriate restrictions should be defined to protect nests in</p>	County	Prior to project approval.  Initials: _____  Date: _____	County

**Table 23-1:  
Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	MONITORING		
		Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	<p>active use and ensure that any young have fledged before construction proceeds.</p> <p><b>Mitigation Measure 7-3.2 Bird-Safe Design.</b></p> <p>The County shall establish design standards for new construction and redevelopment projects to implement bird-safe features to prevent or reduce avian collision risks with glass windows. Consistent with the American Bird Conservancy recommendations, the County shall specify thresholds when standards would apply, such as site location relative to avian habitat and amount of contiguous glass proposed on building facades. If projects meet or exceed the thresholds, the County shall require application of bird-safe design features including, but not limited to, window treatments, glass treatments, and landscaping and lighting modifications. The County or project applicants shall obtain a qualified biologist, with experience in avian ecology, to evaluate proposed building plans and bird-safe design features, where applicable. If the proposed bird-safe design does not sufficiently address collision risks, the biologist shall provide additional bird-safe design recommendations that shall be incorporated.</p> <p><b>Mitigation Measure 7-3.3. Implement Protective Buffers During Vegetation Management.</b></p> <p>To protect wildlife movement corridors and wildlife nursery sites from removal, degradation, or substantial long-term disturbance, the County</p>			

**Table 23-1:  
 Mitigation Monitoring and Reporting Program**

		MONITORING		
Impact	Mitigation Measure	Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	shall minimize vegetation management activities to the greatest extent feasible and implement protective buffers, or specify vegetation management and removal methods to protect wildlife movement corridors and avoid disturbance of wildlife nursery sites.			
<b><i>CULTURAL, TRIBAL CULTURAL, AND HISTORICAL RESOURCES</i></b>				
<b>Impact 8-1: Destruction/Degradation of Historical Resources</b>	<p><b>Mitigation Measure 8-1.</b> For any project facilitated by the Housing and Safety Elements Update project that the County determines may involve a property that contains a potentially significant historical resource, then that resource shall be assessed by a professional who meets the Secretary of the Interior's Professional Qualifications Standards to determine whether the property is a significant historic resource and whether or not the project may have a potentially significant adverse effect on the historical resource. If, based on the recommendation of the qualified professional, the County determines that the project may have a potentially significant effect, the County shall require the applicant to implement the following mitigation measures:</p> <p>(a) Adhere to at least one of the following Secretary of the Interior's Standards:</p> <ul style="list-style-type: none"> <li>▪ Secretary of Interior's <i>Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings</i>; or</li> </ul>	County and Project Proponent	Prior to project approval.  Initials: _____  Date: _____	County

**Table 23-1:  
Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	MONITORING		
		Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	<ul style="list-style-type: none"> <li>▪ Secretary of Interior's <i>Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings</i>.</li> </ul> <p>The qualified professional shall make a recommendation to the County as to whether the project fully adheres to the Secretary of the Interior's Standards, and any specific modifications necessary to do so. The final determination as to a project's adherence to the Standards shall be made by the County body with final decision-making authority over the project. Such a determination of individual project adherence to the Secretary of the Interior's Standards will constitute mitigation of the project historic resource impacts to a <i>less-than-significant level</i> (CEQA Guidelines section 15064.5).</p> <p>(b) If measure (a) is not feasible, the historical resource shall be moved to a new location compatible with the original character and use of the historical resource, and its historical features and compatibility in orientation, setting, and general environment shall be retained, such that a substantial adverse change in the significance of the historical resource is avoided. Implementation of measure (b) would reduce the impact to a <i>less-than-significant level</i>.</p> <p>If neither measure (a) nor measure (b) is feasible, then the County shall, as applicable and to the extent feasible, implement the following measures in the following order:</p>			

**Table 23-1:  
 Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	MONITORING		
		Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	<p>(c) Document the historical resource before any changes that would cause a loss of integrity and loss of continued eligibility. The documentation shall adhere to the Secretary of the Interior's <i>Standards for Architectural and Engineering Documentation</i>. The level of documentation shall be proportionate with the level of significance of the resource. The documentation shall be made available for inclusion in the Historic American Building Survey (HABS) or the Historic American Engineering Record (HAER) Collections in the Library of Congress, the California Historical Resources Information System (CHRIS), and the Bancroft Library, as well as local libraries and historical societies.</p> <p>(d) Retain and reuse the historical resource to the maximum feasible extent and continue to apply the Secretary of the Interior's Standards to the maximum feasible extent in all alterations, additions, and new construction.</p> <p>(e) Through careful methods of planned deconstruction to avoid damage and loss, salvage character-defining features and materials for educational and interpretive use on-site, or for reuse in new construction on the site in a way that commemorates their original use and significance.</p> <p>(f) Interpret the historical significance of the resource through a permanent exhibit or program in a publicly accessible location on the site or elsewhere within the Planning Area.</p>			
<b>GREENHOUSE GAS EMISSIONS AND ENERGY</b>				

**Table 23-1:  
Mitigation Monitoring and Reporting Program**

		MONITORING		
Impact	Mitigation Measure	Implementation Entity	Timing Requirements	Monitoring and Verification Entity
<b>Impact 10-1: Generate Significant Greenhouse Gas Emissions and Conflict with an Applicable Plan, Policy, or Regulation Adopted for the Purposes of Reducing Greenhouse Gas Emissions.</b>	<b>Mitigation Measure 10-1A: Prohibit Natural Gas Plumbing and Appliances in New Housing Sites.</b> The County’s 2022 Green Building Model Reach Code that is under development shall include provision(s) that prohibit natural gas plumbing and the use of natural gas appliances such as cook tops, water heaters, and space heaters in all new housing site developments unless the applicant can show an all-electric building design is not feasible due to specific economic, technical, logistical, or other factors associated with the development site. All new housing sites shall be required to comply with the aforementioned natural gas prohibition requirements prior to the adoption of the County’s 2022 Green Building Model Reach Code.	County of Marin Community Development Agency and Department of Public Works	Adopt updated 2022 2022 Green Building Model Reach Code by November 2022 or otherwise as expeditiously as possible.  Initials: _____  Date: _____	Projects shall be reviewed by the Community Development Agency for compliance with the natural gas prohibition prior to discretionary project approval.
	<b>Mitigation Measure 10-1B: Residential Bicycle Parking Requirements.</b> The County shall require new residential housing sites to comply with the Tier II bicycle parking requirements contained in the latest editions of the California Green Building Standards Code (CalGreen) in effect at the time the building permit application is submitted to the County. Currently, the 2019 CalGreen Code Section A4.106.9, Bicycle Parking, requires new multi-family buildings provide on-site bicycle parking for at least one bicycle per every two dwelling units, with acceptable parking facilities conveniently reached from the street.	County of Marin Community Development Agency	Prior to discretionary project approval.  Initials: _____  Date: _____	County of Marin Community Development Agency or other County entity functioning as the CEQA Lead Agency will review projects and plans being proposed for compliance with this Mitigation Measure.
	<b>Mitigation Measure 10-1C: Reduce VMT from New Residential Development. Implement Mitigation Measure 18-4 (Transportation).</b>	Project sponsors are responsible for submitting documentation that demonstrates how	Prior to issuance of building permit.  Initials: _____	Community Development Agency (CDA)

**Table 23-1:  
 Mitigation Monitoring and Reporting Program**

		MONITORING		
Impact	Mitigation Measure	Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	<p><b>Mitigation Measure 18-4.</b> Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the <i>Technical Advisory on Evaluating Transportation Impacts in CEQA</i>, OPR, 2018 (or subsequent updates), or future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments. For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a major role in most cases. Following are TDM and other strategies that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.</p> <ul style="list-style-type: none"> <li>o Subsidize resident transit passes</li> </ul>	<p>required VMT reductions will be achieved, and for implementing the associated VMT reduction strategies (these will vary but may include implementation of a TDM program and/or physical measures).</p>	<p>Date: _____</p>	



**Table 23-1:  
Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	MONITORING		
		Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	<ul style="list-style-type: none"> <li>○ Provide or participate in established ride-matching program(s)</li> <li>○ Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator</li> <li>○ Complete bus stop improvements or on-site mobility hubs</li> <li>○ Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit</li> <li>○ Subsidize resident transit passes</li> <li>○ Provide or participate in established ride-matching program(s)</li> <li>○ Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator</li> <li>○ Complete bus stop improvements or on-site mobility hubs</li> <li>○ Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit</li> <li>○ Reduce parking supply at affordable or senior projects and projects that are well-served by transit</li> <li>○ Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present</li> <li>○ Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)</li> <li>○ Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.</li> </ul>			

**Table 23-1:  
Mitigation Monitoring and Reporting Program**

		MONITORING		
Impact	Mitigation Measure	Implementation Entity	Timing Requirements	Monitoring and Verification Entity
<b>NOISE</b>				
<b>Impact 15-1: Substantial Permanent Increases in Traffic Noise Levels.</b>	<p><b>Mitigation Measure 15-1: Reduce VMT from New Residential Development.</b> Implement Mitigation Measure 18-4 (Transportation).</p> <p><b>Mitigation Measure 18-4.</b> Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the <i>Technical Advisory on Evaluating Transportation Impacts in CEQA</i>, OPR, 2018 (or subsequent updates), or future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments. For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a major role in most cases. Following are TDM and other strategies</p>	Project sponsors are responsible for submitting documentation to the County that demonstrates how required VMT reductions will be achieved, and for implementing the associated VMT reduction strategies (these will vary but may include implementation of a TDM program and/or physical measures).	<p>Prior to issuance of building permit.</p> <p>Initials: _____</p> <p>Date: _____</p>	Community Development Agency (CDA)

**Table 23-1:  
Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	MONITORING		
		Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	<p>that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.</p> <ul style="list-style-type: none"> <li>○ Subsidize resident transit passes</li> <li>○ Provide or participate in established ride-matching program(s)</li> <li>○ Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator</li> <li>○ Complete bus stop improvements or on-site mobility hubs</li> <li>○ Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit</li> <li>○ Subsidize resident transit passes</li> <li>○ Provide or participate in established ride-matching program(s)</li> <li>○ Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator</li> <li>○ Complete bus stop improvements or on-site mobility hubs</li> <li>○ Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit</li> <li>○ Reduce parking supply at affordable or senior projects and projects that are well-served by transit</li> <li>○ Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present</li> <li>○ Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)</li> </ul>			

**Table 23-1:  
Mitigation Monitoring and Reporting Program**

		MONITORING		
Impact	Mitigation Measure	Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	<ul style="list-style-type: none"> <li>o Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.</li> </ul>			
<b>TRANSPORTATION</b>				
<b>Impact 18-4: Impacts Related to Vehicle Miles Traveled.</b>	<p><b>Mitigation Measure 18-4.</b> Residential development projects shall be required to achieve a VMT significance threshold of 15 percent below the regional average residential VMT per capita. The methodologies and screening parameters used to determine VMT significance shall be consistent with the guidance provided in the <i>Technical Advisory on Evaluating Transportation Impacts in CEQA</i>, OPR, 2018 (or subsequent updates), or future VMT policies adopted by the County of Marin, provided that such policies have been shown through evidence to support the legislative intent of SB 743. Output from the TAMDM travel demand model shall be the source of the regional VMT per capita performance metric used to establish the significance threshold and shall be used in residential development project VMT assessments.</p> <p>For individual residential development projects that do not achieve VMT significance thresholds, applicants shall submit documentation that demonstrates how the necessary VMT per capita reductions will be achieved, relying on available research and evidence to support findings. VMT reduction techniques will vary depending on the location of each development site and the availability of nearby transportation services though utilization of TDM strategies will play a</p>	Project sponsors are responsible for submitting documentation to the County that demonstrates how required VMT reductions will be achieved, and for implementing the associated VMT reduction strategies (these will vary but may include implementation of a TDM program and/or physical measures).	<p>Prior to issuance of building permit.</p> <p>Initials: _____</p> <p>Date: _____</p>	Community Development Agency (CDA)

**Table 23-1:  
Mitigation Monitoring and Reporting Program**

Impact	Mitigation Measure	MONITORING		
		Implementation Entity	Timing Requirements	Monitoring and Verification Entity
	<p>major role in most cases. Following are TDM and other strategies that may be applied; additional measures beyond those provided in this list may be allowed if supported by evidence.</p> <ul style="list-style-type: none"> <li>○ Subsidize resident transit passes</li> <li>○ Provide or participate in established ride-matching program(s)</li> <li>○ Provide information, educational, and marketing resources for residents and visitors managed by a TDM Coordinator</li> <li>○ Complete bus stop improvements or on-site mobility hubs</li> <li>○ Construct off-site pedestrian and/or bicycle network improvements, particularly those that fill gaps and/or connect the project and surrounding neighborhood to transit</li> <li>○ Reduce parking supply at affordable or senior projects and projects that are well-served by transit</li> <li>○ Unbundle parking costs (sell or lease parking separately from the housing unit) where appropriate on-street management is present</li> <li>○ Provide or participate in car-sharing, bike sharing, or scooter sharing program(s)</li> <li>○ Contribute to future VMT mitigation fee programs, banks, or exchanges as they become available.</li> </ul>			

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## **24. ORGANIZATIONS AND PERSONS CONTACTED**

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### **24.1 COUNTY STAFF**

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Melinda Wong, Management Services Division, San Francisco Bay Water Board

Paul Levy, NPDES Municipal Stormwater Permit, State Water Resources Control Board

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Wade B. Holland, Customer Services Manager, Inverness Public Utility District

Jennifer Blackman, General Manager, Bolinas Community Public Utility District

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Bill Northcroft, Staff Engineer, Novato Sanitary District

David Nicholson, P.E., Senior Civil Engineer, San Rafael Sanitation District

Irene Huang, Associate Engineer, Las Gallinas Valley Sanitary District

Bill Hansell, District Manager, Alto Sanitary District



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## 25. EIR PREPARERS

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Taylor Peterson, Director of Biological Analysis

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Anusha Musunuru, Ph.D., Engineering Associate

**CSW | ST 2**, Engineering/Infrastructure

Julia Harberson, PE, QSD/QSP, LEED AP, Senior Project Manager

Kristine Pillsbury, PE, QSD/QSP, Senior Engineer

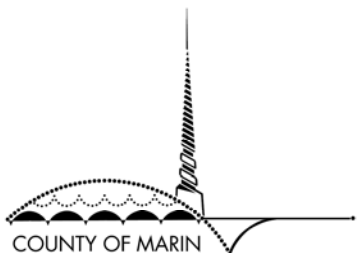
**WILDLAND RESOURCE MANAGEMENT, INC.**

Carol Rice, Wildfire Specialist

**Appendix A: Notice of Preparation (NOP), NOP Comment Letters, Scoping Meeting Questions**

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**NOTICE OF PREPARATION AND  
NOTICE OF PUBLIC SCOPING SESSION  
HOUSING ELEMENT AND SAFETY ELEMENT UPDATES  
TO THE 2007 COUNTYWIDE PLAN UPDATE  
ENVIRONMENTAL IMPACT REPORT**

NOTICE IS HEREBY GIVEN that Marin County will be preparing an Environmental Impact Report (EIR) for updates to the Housing Element and Safety Element of the 2007 Countywide Plan proposed Project. This EIR is being prepared by Marin County, which is the lead agency, in accordance with the California Environmental Quality Act (CEQA), the State of California CEQA Guidelines, and County Environmental Impact Review Guidelines. In accordance with CEQA Guidelines section 15082, this Notice of Preparation (NOP) is being circulated to obtain suggestions and information responsible, and/or trustee, and involved federal agencies and members of the public, including organizations and individuals, on the content and scope and content of the environmental analysis to be included in EIR.

**Project Location:**

The project location is in unincorporated Marin County, which is located across the Golden Gate Bridge from the City of San Francisco, in the northwestern part of the San Francisco Bay Area.

**Project Description:** The proposed Project consists of amendments to update two elements of the Marin County General Plan, as described below.

**Housing Element:**

Marin County, like other communities in California, is initiating a planning process under State law to identify how to meet the County's housing needs at all income levels. This process involves updating the County's Housing Element, which is a required or "mandatory" component of the Countywide Plan (the County's General Plan). The California Department of Housing and Community Development (HCD) dictates that among the seven mandatory elements of a general plan, one element must address local housing needs. The Housing Element will identify adequate sites to meet the 3,569 housing units as assigned by the Regional Housing Need Allocation and a buffer. Sites will be distributed throughout the unincorporated areas of the County consistent with goals to affirmatively further fair housing and meet site requirements stipulated by the State's Housing and Community Development Department. The Housing Element will also present programs and policies to meet the housing needs of unincorporated Marin County.

According to State housing element legislation, all local governments must adopt land use plans and regulations that provide opportunities for, and do not unduly constrain, housing development. Because housing availability is a critical issue with statewide implications, and most housing decisions occur at the local level, State law requires housing elements to be updated on a regular cycle. Accordingly, the timeframe for the next Housing Element is the planning period 2022-2030. The State also mandates that housing elements, unlike other elements of the general plan, be reviewed and certified by the State.

**Safety Element:**

Marin County is initiating a planning process required by State law, to update the Safety Element in the Countywide Plan (the County's General Plan) to address climate change resiliency. SB 379 requires all counties and cities to review and update their general plan safety elements with climate change adaptation measures. The required review and update consists of the following three parts:

- A vulnerability assessment that identifies the risks climate change poses to the local jurisdictions;
- Identification of adaptation and resiliency goals, policies, and objectives; and
- Feasible implementation measures.

The Safety Element update will also address other legislative mandates to reduce fire risk, plan for emergency evacuation, and reduce risks from flooding. The update will occur simultaneously

and in conjunction with the Housing Element and will also occur in coordination with the update of the Marin County Multijurisdictional Local Hazard Mitigation Plan.

**Probable Environmental Effects of the Project:**

The EIR will evaluate the project with respect to all of the following environmental topical issues, which concern environmental factors that could be affected by the proposed Project, but will focus on some issues more than others. The topical areas that will be addressed in the EIR are: Aesthetics, Agricultural and Forestry Resources, Air Quality, Biological Resources, Cultural Resources, Energy, Geology and Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Mandatory Findings of Significance, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, Transportation, Tribal Cultural Resources, Utilities and Service Systems, and Wildfire.

For information regarding environmental review of the proposed Project, please visit the Environmental Review Division's project webpage under the current projects tab at: <https://www.marincounty.org/depts/cd/divisions/environmental-review>

For more information about the Housing Element and Safety Element processes, please visit the Planning Division's webpage at: <https://www.marincounty.org/depts/cd/divisions/planning/housing-and-safety-elements>

Related planning documents and reference information for the Housing and Safety Elements and environmental review are available on the above listed webpage, where you can subscribe to receive email notifications and updates.

To ensure that the EIR for this project is thorough and adequate, and meets the needs of all agencies reviewing it, the County is soliciting comments on specific issues to be included in the environmental review. Public comments on the scope of issues to be evaluated in the EIR are encouraged.

If you wish to comment during the NOP comment period, the County will accept written comments about the scope and content of EIR until the close of the 45-day NOP comment period at 4:00 p.m. on **Monday, January 24, 2022**. Commenters are encouraged to submit comments by email to [envplanning@marincounty.org](mailto:envplanning@marincounty.org) before the end of the comment period deadline. Commenters can also mail written comments postmarked on or before January 24, 2022 to the attention of Rachel Reid, Environmental Planning Manager at 3501 Civic Center Drive, Suite 308, San Rafael, CA 94903. If you have any questions, or need additional information about the Housing or Safety Elements respectively, please contact Jillian Zeiger, Senior Planner with Housing and Federal Grants Division at: [JZeiger@marincounty.org](mailto:JZeiger@marincounty.org) or Leslie Lacko, Senior Planner with Advanced Planning at [LLacko@marincounty.org](mailto:LLacko@marincounty.org).

In compliance with COVID-19 adaptive procedures, and as allowed by Governor Newsom's Executive Order N-29-20, a virtual scoping session will be held on **Tuesday, January 11, 2022** from **6:00 p.m. to 8:00 p.m.** The meeting will be held via Zoom, and members of the public may attend and participate in this scoping session online. To participate in the scoping session, the Zoom weblink and meeting information is as follows:

<https://us06web.zoom.us/j/82023833240>  
Webinar ID: 820 2383 3240

Or by Telephone: (669) 900-6833  
Webinar ID: 820 2383 3240

During the virtual public scoping session, members of the public will have the opportunity to provide oral comments, which will be recorded and included in the Draft EIR. Those wishing to speak will need to indicate so during the course of the meeting by either using the "Raise Hand" button. If you choose to call in to the Zoom meeting, press \*9 to inform the moderator that you would like to comment.

If you challenge the decision on this application in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the Community Development Agency, Planning Division during or prior to the public hearing. (Government Code Section 65009(b)(2)).

December 8, 2021

*Rachel Reid*

Rachel Reid  
Environmental Planning Manager



## NATIVE AMERICAN HERITAGE COMMISSION

December 16, 2021

Rachel Reid, Environmental Planning Manager  
Marin County Community Development Agency  
3501 Civic Center Drive, #308  
San Rafael CA 94903

**Re: 2021120123, Housing & Safety Element update to the 2007 Marin Countywide Plan Project, Marin County**

Dear Ms. Reid:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

**Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.**

CHAIRPERSON  
**Laura Miranda**  
Luiseño

VICE CHAIRPERSON  
**Reginald Pagaling**  
Chumash

PARLIAMENTARIAN  
**Russell Attebery**  
Karuk

COMMISSIONER  
**William Mungary**  
Paiute/White Mountain  
Apache

COMMISSIONER  
**Isaac Bojorquez**  
Ohlone-Costanoan

COMMISSIONER  
**Sara Dutschke**  
Miwok

COMMISSIONER  
**Buffy McQuillen**  
Yakayo Pomo, Yuki,  
Nomlaki

COMMISSIONER  
**Wayne Nelson**  
Luiseño

COMMISSIONER  
**Stanley Rodriguez**  
Kumeyaay

EXECUTIVE SECRETARY  
**Christina Snider**  
Pomo

**NAHC HEADQUARTERS**  
1550 Harbor Boulevard  
Suite 100  
West Sacramento,  
California 95691  
(916) 373-3710  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
[NAHC.ca.gov](http://NAHC.ca.gov)



AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

- 1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project:** Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

  - a. A brief description of the project.
  - b. The lead agency contact information.
  - c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
  - d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).
  
- 2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report:** A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

  - a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).
  
- 3. Mandatory Topics of Consultation If Requested by a Tribe:** The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

  - a. Alternatives to the project.
  - b. Recommended mitigation measures.
  - c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).
  
- 4. Discretionary Topics of Consultation:** The following topics are discretionary topics of consultation:

  - a. Type of environmental review necessary.
  - b. Significance of the tribal cultural resources.
  - c. Significance of the project's impacts on tribal cultural resources.
  - d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).
  
- 5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process:** With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).
  
- 6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document:** If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

  - a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
  - b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

- 7. Conclusion of Consultation:** Consultation with a tribe shall be considered concluded when either of the following occurs:
- a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
  - b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).
- 8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document:** Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).
- 9. Required Consideration of Feasible Mitigation:** If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).
- 10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:**
- a. Avoidance and preservation of the resources in place, including, but not limited to:
    - i. Planning and construction to avoid the resources and protect the cultural and natural context.
    - ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
  - b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
    - i. Protecting the cultural character and integrity of the resource.
    - ii. Protecting the traditional use of the resource.
    - iii. Protecting the confidentiality of the resource.
  - c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
  - d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
  - e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
  - f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).
- 11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource:** An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
- a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
  - b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
  - c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: [http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation\\_CalEPAPDF.pdf](http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf)

## SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: [https://www.opr.ca.gov/docs/09\\_14\\_05\\_Updated\\_Guidelines\\_922.pdf](https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf).

Some of SB 18's provisions include:

1. **Tribal Consultation:** If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. **No Statutory Time Limit on SB 18 Tribal Consultation.** There is no statutory time limit on SB 18 tribal consultation.
3. **Confidentiality:** Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. **Conclusion of SB 18 Tribal Consultation:** Consultation should be concluded at the point in which:
  - a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
  - b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: <http://nahc.ca.gov/resources/forms/>.

## NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center ([http://ohp.parks.ca.gov/?page\\_id=1068](http://ohp.parks.ca.gov/?page_id=1068)) for an archaeological records search. The records search will determine:
  - a. If part or all of the APE has been previously surveyed for cultural resources.
  - b. If any known cultural resources have already been recorded on or adjacent to the APE.
  - c. If the probability is low, moderate, or high that cultural resources are located in the APE.
  - d. If a survey is required to determine whether previously unrecorded cultural resources are present.
2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.

- b.** The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.
- 3.** Contact the NAHC for:
- a.** A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
  - b.** A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.
- 4.** Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
- a.** Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
  - b.** Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
  - c.** Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address:  
[Katy.Sanchez@nahc.ca.gov](mailto:Katy.Sanchez@nahc.ca.gov).

Sincerely,



Katy Sanchez  
Associate Environmental Planner

cc: State Clearinghouse

## Hall, Chelsea

---

**From:** Hultman, Debbie@Wildlife <Debbie.Hultman@wildlife.ca.gov>  
**Sent:** Friday, January 21, 2022 5:41 PM  
**To:** EnvPlanning  
**Cc:** Culpepper, Amanda(Mandy)@Wildlife; Day, Melanie@Wildlife; Weightman, Craig@Wildlife; Swan, Robynn@Wildlife; OPR State Clearinghouse; Aarreberg, Arn@Wildlife; Lacko, Leslie; Zeiger, Jillian  
**Subject:** Housing and Safety Elements Update-Marin County-2021120123  
**Attachments:** Housing and Safety Elements Update-Marin County-2021120123-Reid-CULPEPPER01202022.pdf

Ms. Reid,

Please see the attached letter for your records. If you have any questions, contact Amanda Culpepper, cc'd above.

Thank you,

*Debbie Hultman* | Assistant to the Regional Manager  
California Department of Fish and Wildlife – Bay Delta Region  
2825 Cordelia Road, Ste. 100, Fairfield, CA 94534  
707.428.2037 | [debbie.hultman@wildlife.ca.gov](mailto:debbie.hultman@wildlife.ca.gov)



State of California – Natural Resources Agency

DEPARTMENT OF FISH AND WILDLIFE

Bay Delta Region

2825 Cordelia Road, Suite 100

Fairfield, CA 94534

(707) 428-2002

[www.wildlife.ca.gov](http://www.wildlife.ca.gov)

**GAVIN NEWSOM, Governor**

**CHARLTON H. BONHAM, Director**



January 20, 2022

Ms. Rachel Reid

County of Marin, Environmental Planning

3501 Civic Center Drive, Room 308

San Rafael, CA 94903

[envplanning@marincounty.org](mailto:envplanning@marincounty.org)

Subject: Housing Element and Safety Element Updates to the 2007 Countywide Plan, Notice of Preparation of a Draft Environmental Impact Report, SCH No. 2021120123, Marin County

Dear Ms. Reid:

The California Department of Fish and Wildlife (CDFW) has reviewed the Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) from the County of Marin (County) for the Housing Element and Safety Element Updates to the 2007 Countywide Plan (Project).

CDFW is a **Trustee Agency** with responsibility under the California Environmental Quality Act (CEQA) for commenting on projects that could impact fish, plant, and wildlife resources (Pub. Resources Code, § 21000 et seq.; Cal. Code Regs., tit. 14, § 15386). CDFW is also considered a **Responsible Agency** if a project would require discretionary approval, such as a California Endangered Species Act (CESA) Incidental Take Permit (ITP), a Native Plant Protection Act (NPPA) Permit, a Lake and Streambed Alteration (LSA) Agreement, or approval under other provisions of the Fish and Game Code that afford protection to the state's fish and wildlife trust resources. Pursuant to our authority, CDFW has the following concerns, comments, and recommendations regarding the Project.

## **PROJECT DESCRIPTION AND LOCATION**

The Project would update the Housing Element and the Safety Element within the County's General Plan. The Housing Element would identify locations in unincorporated Marin County to meet the need for 3,569 housing units and present programs and policies to meet the housing needs of unincorporated Marin County. The timeframe for the Housing Element update would be 2022 through 2030. The Safety Element would be amended to address climate change resiliency, including fire risk reduction, emergency evacuation plans, and flood risk reduction. The Safety Element update would also include a vulnerability assessment identifying climate change risks to communities; a list of climate change adaptation and resiliency goals, policies, and

Ms. Rachel Reid  
County of Marin  
January 20, 2022  
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objectives; and potential implementation measures. The Project is located in unincorporated Marin County.

The CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.) require that the draft EIR incorporate a full project description, including reasonably foreseeable future phases of the Project, that contains sufficient information to evaluate and review the Project's environmental impact (CEQA Guidelines, §§ 15124 & 15378). Please include a complete description of the following Project components in the Project description, as applicable:

- Footprints of permanent Project features and temporarily impacted areas, such as staging areas, access routes, and high fire risk zones targeted for vegetation treatment or removal.
- Land use changes that would reduce open space or agricultural land uses and increase residential or other land use involving increased development.
- Area and plans for any proposed buildings/structures, ground disturbing activities, fencing, paving, stationary machinery, landscaping, vegetation treatment for fuel reduction, floodwalls or levees, and stormwater systems.
- Operational features of the Project, including level of anticipated human presence (describe seasonal or daily peaks in activity, if relevant), artificial lighting/light reflection, noise, traffic generation, and other features.
- Construction schedule, activities, equipment, and crew sizes.

Based on the broad scope of the Project, it appears that the draft EIR may be a program EIR (CEQA Guidelines, § 15168). In this case, while program EIRs have a necessarily broad scope, CDFW recommends providing as much information related to anticipated future activities as possible. CDFW recognizes that, pursuant to CEQA Guidelines section 15152, subdivision (c), if a Lead Agency is using the tiering process in connection with an EIR or large-scale planning approval, the development of detailed, site-specific information may not be feasible and can be deferred, in many instances, until such time as the Lead Agency prepares a future environmental document. This future environmental document would cover a project of a more limited geographical scale and is appropriate if the deferred information does not prevent adequate identification of significant effects of the planning approval at hand. The CEQA Guidelines section 15168, subdivision (c)(4) states, "Where the later activities involve site-specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were within the scope of the program EIR." Based on CEQA Guidelines section 15183.3 and associated *Appendix N Checklist*, and

Ms. Rachel Reid  
County of Marin  
January 20, 2022  
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consistent with other program EIRs, CDFW recommends creating a procedure or checklist for evaluating subsequent project impacts on biological resources to determine if they are within the scope of the program EIR or if an additional environmental document is warranted. This checklist should be included as an attachment to the draft EIR. Future analysis should include all special-status species and sensitive natural communities including but not limited to species considered rare, threatened, or endangered pursuant to CEQA Guidelines, section 15380.

When used appropriately, the checklist should be accompanied by enough relevant information and reasonable inferences to support a “within the scope” of the EIR conclusion. For subsequent Project activities that may affect sensitive biological resources, a site-specific analysis should be prepared by a qualified biologist to provide the necessary supporting information. In addition, the checklist should cite the specific portions of the draft EIR, including page and section references, containing the analysis of the subsequent Project activities’ significant effects and indicate whether it incorporates all applicable mitigation measures from the draft EIR.

## **REGULATORY REQUIREMENTS**

### **California Endangered Species Act and Native Plant Protection Act**

Please be advised that a CESA ITP must be obtained if the Project has the potential to result in take<sup>1</sup> of plants or animals listed under CESA or NPPA, either during construction or over the life of the Project. If the Project will impact CESA or NPPA listed species, including but not limited to those identified in the table below, early consultation with CDFW is encouraged, as significant modification to the Project and mitigation measures may be required to obtain an ITP. Issuance of an ITP is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program.

CEQA requires a Mandatory Finding of Significance if a Project is likely to substantially restrict the range or reduce the population of a threatened or endangered species (Pub. Resources Code, §§ 21001, subd. (c), 21083; CEQA Guidelines, §§ 15380, 15064, & 15065). Impacts must be avoided or mitigated to less-than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The Lead Agency’s FOC does not eliminate the Project proponent’s obligation to comply with CESA.

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<sup>1</sup> Take is defined in Fish and Game Code section 86 as hunt, pursue, catch, capture, or kill, or attempt any of those activities.



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## Lake and Streambed Alteration

CDFW requires an LSA Notification, pursuant to Fish and Game Code section 1600 et seq., for Project activities affecting lakes or streams and associated riparian habitat. Notification is required for any activity that may substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake, or stream. Work within ephemeral streams, drainage ditches, washes, watercourses with a subsurface flow, and floodplains are subject to notification requirements. In addition, infrastructure installed beneath such aquatic features, such as through hydraulic directional drilling, is also subject to notification. CDFW, as a responsible agency under CEQA, will consider the EIR for the Project. CDFW may not execute the final LSA Agreement until it has complied with CEQA as the responsible agency.

## Nesting Birds

CDFW also has authority over actions that may disturb or destroy active nest sites or take birds. Fish and Game Code sections 3503, 3503.5, and 3513 protect birds, their eggs, and nests. Fully Protected birds such as white-tailed kite (*Elanus leucurus*), California Ridgway's rail (*Rallus obsoletus obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), American peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), and California brown pelican (*Pelecanus occidentalis californicus*), may not be taken or possessed at any time (Fish & G. Code, § 3511). Migratory birds are also protected under the federal Migratory Bird Treaty Act.

## ENVIRONMENTAL SETTING

The draft EIR should provide sufficient information regarding the environmental setting ("baseline") to understand the Project's, and its alternative's (if applicable), potentially significant impacts on the environment (CEQA Guidelines, §§ 15125 & 15360).

CDFW recommends that the draft EIR provide baseline habitat assessments for special-status plant, fish, and wildlife species located and potentially located within the Project area and surrounding lands, including but not limited to all rare, threatened, or endangered species (CEQA Guidelines, § 15380). The draft EIR should describe aquatic habitats, such as wetlands, vernal pools, and/or waters of the U.S. or State, and any sensitive natural communities or riparian habitat occurring on or adjacent to the Project site (for sensitive natural communities see: <https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities#sensitive%20natural%20communities>). Fully protected, threatened or endangered, and other special-status species that are known to occur, or have the potential to occur in or near the Project area, include but are not limited to, those listed in **Attachment 1: Special-Status Species**.

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Habitat descriptions and the potential for species occurrence should include information from multiple sources, such as aerial imagery; historical and recent survey data; field reconnaissance; scientific literature and reports; the U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Consultation System; findings from positive occurrence databases such as the California Natural Diversity Database (CNDDDB); and sensitive natural community information available on the Marin County Fine Scale Vegetation Map<sup>2</sup>. Based on the data and information from the habitat assessment, the draft EIR should adequately assess which special-status species are likely to occur on or near the Project site, and whether they could be impacted by the Project.

CDFW recommends that prior to Project implementation, surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at: <https://wildlife.ca.gov/Conservation/Survey-Protocols>.

Botanical surveys for special-status plant species, including those with a California Rare Plant Rank (<http://www.cnps.org/cnps/rareplants/inventory/>), must be conducted during the blooming period for all species potentially impacted by the Project within the Project area and adjacent habitats that may be indirectly impacted by, for example, changes to hydrology, and require the identification of reference populations. More than one year of surveys may be necessary given environmental conditions. Please refer to CDFW protocols for surveying and evaluating impacts to rare plants, and survey report requirements (<https://wildlife.ca.gov/Conservation/Plants>).

## **IMPACT ANALYSIS AND MITIGATION MEASURES**

The draft EIR should discuss all direct and indirect impacts (temporary and permanent), including reasonably foreseeable impacts, that may occur with implementation of the Project (CEQA Guidelines, §§ 15126, 15126.2, & 15358). This includes evaluating and describing impacts such as:

- Encroachments into riparian habitats, drainage ditches, wetlands, or other sensitive areas.
- Potential for impacts to special-status species or sensitive natural communities.
- Loss or modification of breeding, nesting, dispersal, and foraging habitat, including vegetation removal, alteration of soils and hydrology, and removal of habitat structural features (e.g., snags, rock outcrops, overhanging banks).

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<sup>2</sup> One Tam hosts the Marin Fine Scale Vegetation Web Map at <https://parksconservancy.maps.arcgis.com/apps/webappviewer/index.html?id=4ef2881436bc4365be881b17f69ab067>

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- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic, or human presence.
- Obstruction of movement corridors, fish passage, or access to water sources and other core habitat features.

The draft EIR should also identify reasonably foreseeable future projects in the Project vicinity, disclose any cumulative impacts associated with these projects, determine the significance of each cumulative impact, and assess the significance of the Project's contribution to the impact (CEQA Guidelines, § 15355). Although a project's impacts may be less-than-significant individually, its contributions to a cumulative impact may be considerable; a contribution to a significant cumulative impact, e.g., reduction of habitat for a special-status species, should be considered cumulatively considerable.

Based on the comprehensive analysis of the direct, indirect, and cumulative impacts of the Project, the CEQA Guidelines direct the Lead Agency to consider and describe all feasible mitigation measures to avoid potentially significant impacts in the draft EIR, and mitigate potentially significant impacts of the Project on the environment (CEQA Guidelines, §§ 15021, 15063, 15071, 15126.4 & 15370). This includes a discussion of impact avoidance and minimization measures for special-status species, which are recommended to be developed in early consultation with CDFW, USFWS, and the National Marine Fisheries Service. Project-specific measures should be incorporated as enforceable Project conditions to reduce impacts to biological resources to less-than-significant levels.

Fully protected species such as white-tailed kite, California Ridgway's rail, California black rail, California brown pelican, bald eagle, golden eagle, American peregrine falcon, and salt-marsh harvest mouse, may not be taken or possessed at any time (Fish & G. Code, §§ 3511, 4700, 5050, & 5515). Therefore, the draft EIR should include measures to ensure complete avoidance of these species.

## **ENVIRONMENTAL DATA**

CEQA requires that information developed in EIRs and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to CNDDDB. The CNDDDB online field survey form and other methods for submitting data can be found at: <https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data>. The types of information reported to CNDDDB can be found at: <https://wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

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## FILING FEES

CDFW anticipates that the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (Fish & G. Code, § 711.4; Pub. Resources Code, § 21089). Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

If you have any questions, please contact Amanda Culpepper, Environmental Scientist, at [amanda.culpepper@wildlife.ca.gov](mailto:amanda.culpepper@wildlife.ca.gov); or Melanie Day, Senior Environmental Scientist (Supervisory), at [melanie.day@wildlife.ca.gov](mailto:melanie.day@wildlife.ca.gov).

Sincerely,

DocuSigned by:

*Erin Chappell*

B77E9A6211EF486

Erin Chappell  
Regional Manager  
Bay Delta Region

Attachment 1: Special-Status Species

ec: State Clearinghouse (SCH No. 2021120123)

Robynn Swan, CDFW Bay Delta Region, [robynn.swan@wildlife.ca.gov](mailto:robynn.swan@wildlife.ca.gov)

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### Attachment 1: Special-Status Species

Scientific Name	Common Name	Status
<b>Birds</b>		
<i>Rallus obsoletus obsoletus</i>	California Ridgway's rail	CESA and Endangered Species Act (ESA) listed as endangered; California Fully Protected species
<i>Laterallus jamaicensis coturniculus</i>	California black rail	CESA listed as threatened; California Fully Protected species
<i>Strix occidentalis caurina</i>	northern spotted owl	CESA and ESA listed as threatened
<i>Agelaius tricolor</i>	tricolored blackbird	CESA listed as threatened
<i>Haliaeetus leucocephalus</i>	bald eagle	CESA listed as endangered; California Fully Protected species; Bald and Golden Eagle Protection Act
<i>Charadrius nivosus nivosus</i>	western snowy plover	ESA listed as threatened; California Species of Special Concern (SSC)
<i>Athene cunicularia</i>	burrowing owl	SSC
<i>Aquila chrysaetos</i>	golden eagle	California Fully Protected species; Bald and Golden Eagle Protection Act
<i>Lanius ludovicianus</i>	loggerhead shrike	SSC
<i>Asio flammeus</i>	short-eared owl	SSC
<i>Circus hudsonius</i>	northern harrier	SSC
<i>Geothlypis trichas sinuosa</i>	saltmarsh common yellowthroat	SSC
<i>Melospiza melodia samuelis</i>	San Pablo song sparrow	SSC
<i>Coturnicops noveboracensis</i>	yellow rail	SSC
<i>Fratercula cirrhata</i>	tufted puffin	SSC

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Scientific Name	Common Name	Status
<i>Elanus leucurus</i>	white-tailed kite	California Fully Protected species
<i>Falco peregrinus anatum</i>	American peregrine falcon	California Fully Protected species
<i>Pelecanus occidentalis californicus</i>	California brown pelican	California Fully Protected species
<b><i>Fish</i></b>		
<i>Hypomesus transpacificus</i>	Delta smelt	CESA listed as endangered; ESA listed threatened
<i>Spirinchus thaleichthys</i>	longfin smelt	CESA listed as threatened; candidate for ESA listing
<i>Oncorhynchus kisutch</i> pop. 4	Coho salmon south of Punta Gorda	CESA and ESA listed as endangered
<i>Oncorhynchus tshawytscha</i> pop. 7	Sacramento River winter-run Chinook salmon	CESA and ESA listed as endangered
<i>Oncorhynchus tshawytscha</i> pop. 11	Central Valley spring-run Chinook salmon	CESA and ESA listed as threatened
<i>Eucyclogobius newberryi</i>	tidewater goby	ESA listed as endangered
<i>Acipenser medirostris</i>	green sturgeon	Southern Distinct Population Segment ESA listed as threatened; SSC
<i>Oncorhynchus mykiss irideus</i> pop. 8	central California coast steelhead	ESA listed as threatened
<i>Hesperoleucus venustus subditus</i>	southern coastal roach	SSC
<i>Culpea pallasii</i>	Pacific herring	Culturally and historically important fishery managed by CDFW

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Scientific Name	Common Name	Status
<b>Amphibians</b>		
<i>Rana draytonii</i>	California red-legged frog	ESA listed as threatened; SSC
<i>Rana boylei</i>	foothill yellow-legged frog, northwest/north coast clade	SSC
<i>Dicamptodon ensatus</i>	California giant salamander	SSC
<b>Mammals</b>		
<i>Reithrodontomys raviventris</i>	salt-marsh harvest mouse	CESA and ESA listed as endangered; California Fully Protected species
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	SSC
<i>Antrozous pallidus</i>	pallid bat	SSC
<i>Lasiurus blossevillii</i>	western red bat	SSC
<i>Taxidea taxus</i>	American badger	SSC
<i>Aplodontia rufa phaea</i>	Point Reyes mountain beaver	SSC
<i>Zapus trinotatus orarius</i>	Point Reyes jumping mouse	SSC
<i>Eumetopias jubatus</i>	Steller sea lion	Marine Mammal Commission Marine Mammal Species of Special Concern
<b>Reptiles</b>		
<i>Emys marmorata</i>	western pond turtle	SSC
<b>Invertebrates</b>		
<i>Syncaris pacifica</i>	California freshwater shrimp	CESA and ESA listed as endangered

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Scientific Name	Common Name	Status
<i>Icaricia icarioides missionensis</i>	Mission blue butterfly	ESA listed as endangered; California Terrestrial and Vernal Pool Invertebrate of Conservation Priority (ICP) <sup>3</sup>
<i>Speyeria zerene myrtleae</i>	Myrtle's silverspot butterfly	ESA listed as endangered; ICP
<i>Danaus plexippus</i> pop. 1	monarch - California overwintering population	ESA candidate for listing; ICP
<i>Bombus crotchii</i>	Crotch bumble bee	ICP
<i>Bombus caliginosus</i>	obscure bumble bee	ICP
<i>Bombus occidentalis</i>	western bumble bee	ICP
<i>Calicina diminua</i>	Marin blind harvestman	ICP
<i>Callophrys mossii marinensis</i>	Marin elfin butterfly	ICP
<i>Coelus globosus</i>	globose dune beetle	ICP
<i>Helminthoglypta nickliniana awania</i>	Peninsula coast range shoulderband	ICP
<i>Helminthoglypta stiversiana williamsi</i>	Williams' bronze shoulderband	ICP
<i>Icaricia icarioides parapheres</i>	Point Reyes blue butterfly	ICP
<i>Microcina tiburona</i>	Tiburon micro-blind harvestman	ICP

<sup>3</sup> The list of California Terrestrial and Vernal Pool Invertebrates of Conservation Priority was collated during CDFW's Scientific Collecting Permit rulemaking process:  
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=157415&inline>



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Scientific Name	Common Name	Status
<b>Plants</b>		
<i>Chloropyron molle</i> ssp. <i>molle</i>	soft salty bird's-beak	NPPA listed as rare; ESA listed as endangered; California Rare Plant Rank (CRPR) <sup>4</sup> 1B.2
<i>Delphinium bakeri</i>	Baker's larkspur	CESA and ESA listed as endangered; CRPR 1B.1
<i>Delphinium luteum</i>	golden larkspur	NPPA listed as rare; ESA listed as endangered; CRPR 1B.1
<i>Arenaria paludicola</i>	marsh sandwort	CESA and ESA listed as endangered; CRPR 1B.1
<i>Calochortus tiburonensis</i>	Tiburon mariposa-lily	CESA and ESA listed as threatened; CRPR 1B.1
<i>Castilleja affinis</i> var. <i>neglecta</i>	Tiburon paintbrush	CESA listed as threatened; ESA listed as endangered; CRPR 1B.2
<i>Chorizanthe valida</i>	Sonoma spineflower	CESA and ESA listed as endangered; CRPR 1B.1
<i>Hesperolinon congestum</i>	Marin western flax	CESA and ESA listed as threatened, CRPR 1B.1
<i>Holocarpha macradenia</i>	Santa Cruz tarplant	CESA listed as endangered; ESA listed as threatened; CRPR 1B.1
<i>Layia carnosa</i>	beach layia	CESA and ESA listed as endangered; CRPR 1B.1
<i>Limnanthes douglasii</i> ssp. <i>sulphurea</i>	Point Reyes meadowfoam	CESA listed as endangered; CRPR 1B.2
<i>Lupinus tidestromii</i>	Tidestrom's lupine	CESA and ESA listed as endangered; CRPR 1B.1

<sup>4</sup> CRPR 1B plants are considered rare, threatened, or endangered in California and elsewhere while CRPR 4 plants are considered watch list plants that have a limited distribution in California. Further information on CRPR ranks is available in CDFW's *Special Vascular Plants, Bryophytes, and Lichens List* (<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline>) and on the California Native Plant Society website (<https://www.cnps.org/rare-plants/cnps-rare-plant-ranks>).

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<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Pentachaeta bellidiflora</i>	white-rayed pentachaeta	CESA and ESA listed as endangered; CRPR 1B.1
<i>Pleuropogon hooverianus</i>	North Coast semaphore grass	CESA listed as threatened; CRPR 1B.1
<i>Streptanthus glandulosus</i> ssp. <i>niger</i>	Tiburon jewelflower	CESA listed as endangered; CRPR 1B.1
<i>Blennosperma nanum</i> var. <i>robustum</i>	Point Reyes blennosperma	NPPA listed as rare; CRPR 1B.2
<i>Ceanothus masonii</i>	Mason's ceanothus	NPPA listed as rare; CRPR 1B.2
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis	NPPA listed as rare; CRPR 1B.1
<i>Trifolium polyodon</i>	Pacific Grove clover	NPPA listed as rare; CRPR 1B.1
<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus	ESA listed as endangered, CRPR 1B.1
<i>Lasthenia conjugens</i>	Contra Costa goldfields	ESA listed as endangered; CRPR 1B.1
<i>Trifolium amoenum</i>	two-fork clover	ESA listed as endangered; CRPR 1B.1
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	CRPR 1B.1
<i>Agrostis blasdalei</i>	Blasdale's bent grass	CRPR 1B.2
<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	CRPR 1B.2
<i>Amsinckia lunaris</i>	bent-flowered fiddleneck	CRPR 1B.2
<i>Arctostaphylos montana</i> ssp. <i>montana</i>	Mt. Tamalpais manzanita	CRPR 1B.3
<i>Arctostaphylos virgata</i>	Marin manzanita	CRPR 1B.2

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<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk-vetch	CRPR 1B.2
<i>Calamagrostis crassiglumis</i>	Thurber's reed grass	CRPR 2B.1
<i>Calystegia purpurata</i> ssp. <i>saxicola</i>	coastal bluff morning-glory	CRPR 1B.2
<i>Campanula californica</i>	swamp harebell	CRPR 1B.2
<i>Cardamine angulata</i>	seaside bittercress	CRPR 2B.1
<i>Carex leptalea</i>	bristle-stalked sedge	CRPR 2B.2
<i>Carex lyngbyei</i>	Lyngbye's sedge	CRPR 2B.2
<i>Castilleja ambigua</i> var. <i>humboldtiensis</i>	Humboldt Bay owl's-clover	CRPR 1B.2
<i>Castilleja leschkeana</i>	Point Reyes paintbrush	CRPR 1A
<i>Ceanothus decornutus</i>	Nicasio ceanothus	CRPR 1B.2
<i>Ceanothus gloriosus</i> var. <i>porrectus</i>	Mt. Vision ceanothus	CRPR 1B.3
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes salty bird's-beak	CRPR 1B.2
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	San Francisco Bay spineflower	CRPR 1B.2
<i>Cicuta maculata</i> var. <i>bolanderi</i>	Bolander's water-hemlock	CRPR 2B.1
<i>Cirsium andrewsii</i>	Franciscan thistle	CRPR 1B.2
<i>Cirsium hydrophilum</i> var. <i>vaseyi</i>	Mt. Tamalpais thistle	CRPR 1B.2

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<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Clarkia concinna</i> ssp. <i>raichei</i>	Raiche's red ribbons	CRPR 1B.1
<i>Collinsia corymbosa</i>	round-headed Chinese-houses	CRPR 1B.2
<i>Collinsia multicolor</i>	San Francisco collinsia	CRPR 1B.2
<i>Dirca occidentalis</i>	western leatherwood	CRPR 1B.2
<i>Entosthodon kochii</i>	Koch's cord moss	CRPR 1B.3
<i>Erigeron supplex</i>	supple daisy	CRPR 1B.2
<i>Eriogonum luteolum</i> var. <i>caninum</i>	Tiburon buckwheat	CRPR 1B.2
<i>Erysimum concinnum</i>	bluff wallflower	CRPR 1B.2
<i>Fissidens pauperculus</i>	minute pocket moss	CRPR 1B.2
<i>Fritillaria lanceolata</i> var. <i>tristulis</i>	Marin checker lily	CRPR 1B.1
<i>Fritillaria liliacea</i>	fragrant fritillary	CRPR 1B.2
<i>Gilia capitata</i> ssp. <i>chamissonis</i>	blue coast gilia	CRPR 1B.1
<i>Gilia capitata</i> ssp. <i>tomentosa</i>	woolly-headed gilia	CRPR 1B.1
<i>Gilia millefoliata</i>	dark-eyed gilia	CRPR 1B.2
<i>Helianthella castanea</i>	Diablo helianthella	CRPR 1B.2
<i>Hemizonia congesta</i> ssp. <i>congesta</i>	congested-headed hayfield tarplant	CRPR 1B.2
<i>Hesperervax sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax	CRPR 1B.2
<i>Heteranthera dubia</i>	water star-grass	CRPR 2B.2

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<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Horkelia marinensis</i>	Point Reyes horkelia	CRPR 1B.2
<i>Hypogymnia schizidiata</i>	island tube lichen	CRPR 1B.3
<i>Kopsiopsis hookeri</i>	small groundcone	CRPR 2B.3
<i>Lasthenia californica</i> <i>ssp. bakeri</i>	Baker's goldfields	CRPR 1B.2
<i>Lasthenia californica</i> <i>ssp. macrantha</i>	perennial goldfields	CRPR 1B.2
<i>Leptosiphon rosaceus</i>	rose leptosiphon	CRPR 1B.1
<i>Lessingia hololeuca</i>	woolly-headed lessingia	CRPR 3
<i>Lessingia micradenia</i> <i>var. micradenia</i>	Tamalpais lessingia	CRPR 1B.2
<i>Lilium maritimum</i>	coast lily	CRPR 1B.1
<i>Microseris paludosa</i>	marsh microseris	CRPR 1B.2
<i>Monardella sinuata</i> ssp. <i>nigrescens</i>	northern curly-leaved monardella	CRPR 1B.2
<i>Navarretia rosulata</i>	Marin County navarretia	CRPR 1B.2
<i>Phacelia insularis</i> var. <i>continentis</i>	North Coast phacelia	CRPR 1B.2
<i>Piperia elegans</i> ssp. <i>decurtata</i>	Point Reyes rein orchid	CRPR 1B.1
<i>Plagiobothrys glaber</i>	hairless popcornflower	CRPR 1A
<i>Polemonium carneum</i>	Oregon polemonium	CRPR 2B.2
<i>Polygonum marinense</i>	Marin knotweed	CRPR 3.1
<i>Quercus parvula</i> var. <i>tamalpaisensis</i>	Tamalpais oak	CRPR 1B.3

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<b>Scientific Name</b>	<b>Common Name</b>	<b>Status</b>
<i>Rhynchospora californica</i>	California beaked-rush	CRPR 1B.1
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	CRPR 1B.2
<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	Point Reyes checkerbloom	CRPR 1B.2
<i>Sidalcea hickmanii</i> ssp. <i>viridis</i>	Marin checkerbloom	CRPR 1B.1
<i>Sidalcea malviflora</i> ssp. <i>purpurea</i>	purple-stemmed checkerbloom	CRPR 1B.2
<i>Silene scouleri</i> ssp. <i>scouleri</i>	Scouler's catchfly	CRPR 2B.2
<i>Stebbinsoseris decipiens</i>	Santa Cruz microseris	CRPR 1B.2
<i>Streptanthus anomalus</i>	Mount Burdell jewelflower	CRPR 1B.1
<i>Streptanthus batrachopus</i>	Tamalpais jewelflower	CRPR 1B.3
<i>Streptanthus glandulosus</i> ssp. <i>pulchellus</i>	Mt. Tamalpais bristly jewelflower	CRPR 1B.2
<i>Triphysaria floribunda</i>	San Francisco owl's-clover	CRPR 1B.2
<i>Triquetrella californica</i>	coastal triquetrella	CRPR 1B.2

## Hall, Chelsea

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**From:** Reid, Rachel  
**Sent:** Monday, January 24, 2022 12:27 PM  
**To:** EnvPlanning  
**Subject:** Fw: Marin County Housing and Safety Update NOP - Caltrans Comments  
**Attachments:** Marin County Housing and Safety NOP Caltrans.pdf

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**From:** Ayon, Llisel@DOT <Llisel.Ayon@dot.ca.gov>  
**Sent:** Thursday, January 20, 2022 1:33 PM  
**To:** Reid, Rachel <rreid@marincounty.org>  
**Cc:** OPR State Clearinghouse <State.Clearinghouse@opr.ca.gov>  
**Subject:** Marin County Housing and Safety Update NOP - Caltrans Comments

Hello Rachel,

Thank you for including Caltrans in the review process for this project. The following comments are based on our review of the NOP. If you have any questions regarding these comments or require any additional information, please feel free to contact me at this email address or the phone number listed below.

Thank you,

**Llisel Ayon**  
Associate Transportation Planner  
Local Development Review  
California Department of Transportation – District 4  
Cell: (510) 506-6184



## California Department of Transportation

DISTRICT 4  
OFFICE OF TRANSIT AND COMMUNITY PLANNING  
P.O. BOX 23660, MS-10D | OAKLAND, CA 94623-0660  
[www.dot.ca.gov](http://www.dot.ca.gov)



January 20, 2022

SCH #: 2021120123  
GTS #: 04-MRN-2021-00224  
GTS ID: 24967  
Co/Rt/Pm: MRN/VAR/VAR

Rachel Reid  
Environmental Planning Manager  
County of Marin  
3501 Civic Center Drive, Room 308  
San Rafael, CA 94903

### **Re: Housing and Safety Element Update Notice of Preparation (NOP) for Draft Environmental Impact Report (DEIR)**

Dear Rachel Reid:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Marin County Housing and Safety Element Update. We are committed to ensuring that impacts to the State's multimodal transportation system and to our natural environment are identified and mitigated to support a safe, sustainable, integrated and efficient transportation system. The following comments are based on our review of the December 2021 NOP.

#### **Project Understanding**

The County of Marin is in the process of updating the Housing and Safety Elements of the Countywide Plan (the County's General Plan). The Countywide Plan serves as the guiding vision for the future of unincorporated Marin. These Elements focus on housing needs and conditions, and climate change adaptation measures including wildfire, sea level rise and flooding concerns.

#### **Travel Demand Analysis**

With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses Transportation Impact Studies, please review Caltrans' Transportation Impact Study Guide ([link](#)).



If the project meets the screening criteria established in the City's adopted Vehicle Miles Traveled (VMT) policy to be presumed to have a less-than-significant VMT impact and exempt from detailed VMT analysis, please provide justification to support the exempt status in align with the City's VMT policy. Projects that do not meet the screening criteria should include a detailed VMT analysis in the DEIR, which should include a VMT analysis pursuant to the City's guidelines. Projects that result in automobile VMT per capita above the threshold of significance for existing (i.e. baseline) city-wide or regional values for similar land use types may indicate a significant impact. If necessary, mitigation for increasing VMT should be identified. Mitigation should support the use of transit and active transportation modes. Potential mitigation measures that include the requirements of other agencies such as Caltrans are fully enforceable through permit conditions, agreements, or other legally-binding instruments under the control of the City.

### **Lead Agency**

As the Lead Agency, the County of Marin is responsible for all project mitigation, including any needed improvements to the State Transportation Network (STN). The project's fair share contribution, financing, scheduling, implementation responsibilities and lead agency monitoring should be fully discussed for all proposed mitigation measures.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, or for future notifications and requests for review of new projects, please email [LDR-D4@dot.ca.gov](mailto:LDR-D4@dot.ca.gov).

Sincerely,



MARK LEONG  
District Branch Chief  
Local Development Review

c: State Clearinghouse

## Hall, Chelsea

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**From:** Marin County <notifications@engagementhq.com>  
**Sent:** Thursday, January 13, 2022 10:56 AM  
**To:** notifications@engagementhq.com; Tanielian, Aline; Taylor, Tammy  
**Subject:** A new question has been added to Submit comments!

Hi there,

Just a quick heads up to let you know that a new question has been asked at Marin County Housing and Safety Elements Environmental Review by Laura Lovett.

The question that was asked is:

Thank you for asking for input. The new housing element should reflect three revolutions in thinking about urban and suburban areas: 1. "Spare plus Share." No longer is environmental conservation something that is done "over there" in parks and preserves, but something to which urban and suburban areas must also make important contributions. No longer are these areas to be treated as "ecological deserts." Please require that native trees be planted on all streetscapes and in public gardens--these are essential to retaining what biodiversity we have and not optional choices. 2. "Health is Here." Now, as more than half the world's population lives in urban and suburban areas, making sure these are high-functioning ecosystems is more important than ever. The impact of the quality of these ecosystems on human mental and physical health has been made more clear by the current pandemic. How much green space is there and is it planted with something other than lawn? will it absorb water when we get heavy rains or add to stormwater runoff? What materials are chosen for buildings and hardscape? Can we reduce the huge impact of concrete everywhere? 3. "Smart Growth plus Ecological Design." Although efforts to increase human density in some areas has been met with resistance, this is because the widely varying environmental quality of high-density developments has not received enough attention. Greater attention to ecological design can increase the environmental quality of smart growth. Please give tax breaks and bonus footage to those who DO MORE FOR THE ENVIRONMENT rather than contractors who are trying to squeeze top dollar from every acre. It should also reflect current thinking about our world environmental crisis, which includes severe biodiversity loss, climate change and increased pollution. Laura Lovett, Marin chapter, California Native Plant Society

Please DO NOT reply to this email. If you want to provide an answer to this question, sign into your site and respond to the question from within the Q & A tool.

Regards

Bang The Table Team

## Hall, Chelsea

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**From:** Laura Lovett <llovett@earthlink.net>  
**Sent:** Sunday, January 23, 2022 3:06 PM  
**To:** EnvPlanning  
**Subject:** Comments on the New Housing Element from CNPS Marin chapter  
**Attachments:** MHE CNPS Jan 2022.pdf

MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY  
PLANNING DIVISION  
PUBLIC SCOPING SESSION  
ENVIRONMENTAL IMPACT REPORT FOR  
HOUSING AND SAFETY ELEMENT UPDATES  
WRITTEN COMMENT FORM  
January 11, 2022

Name/Affiliation: California Native Plant Society, Marin Chapter

Address: Post Office Box 1408

City Mill Valley CA

Zip Code: 94942-1408

Telephone: N/A

*Please provide comments and concerns regarding the environmental effects of the proposed project or the environmental process below.*

**The new housing element should reflect three revolutions in thinking about urban and suburban areas:**

1. Spare plus Share. No longer is environmental conservation something that is done “over there” in parks and preserves, but something to which urban and suburban areas must also make important contributions. No longer are these areas to be treated as “ecological deserts.” These are a few ideas:
  - To increase biodiversity, street trees and public plantings should be at least 70% native plants;
  - Use of green materials should be encouraged/required, particularly alternative forms of concrete that are less polluting, and catch basins and permeable paving that lets water soak into the ground.
2. Smart Growth plus Ecological Design. Efforts to increase human density in some areas has been met with resistance, which may be due to the widely varying environmental quality of high-density developments. Greater attention to ecological design can increase the environmental quality of smart growth.
3. Climate Change. The new Housing Element should also reflect current thinking about our world environmental crisis. The recent United Nations report *Making Peace with Nature* has identified the three main threats to our global environment. Each of these must get adequate attention:
  - Biodiversity Loss. Conservation and restoration of native species must be a priority.
  - Climate Change. Reduced emission and increased carbon sequestration must be important goals.
  - Increased Pollution. Air pollution, water pollution and solid waste production must be reduced.

**Native plants can play key roles in improving environmental quality in these areas. Following are some examples.**

1. Native plants are the foundations of the food webs for all other living things. Recent studies show that when the proportion of native plants falls below 70%, there is a great drop in the abundance and

diversity of insects, birds and other life forms. Most Marin neighborhoods are well below this threshold. The county should be the biggest proponent of the use of native plants in landscaping, thereby setting the example for other cities and towns.

2. Properly selected native plants continue to produce biomass even under conditions of recurring drought. Plants sequester carbon through photosynthesis, removing it from the atmosphere. The massive removal of mature trees, in particular, has added to greenhouse warming. Use of native trees in public spaces that are bought and paid for with our tax dollars should be a requirement, not an option.

3. Native plants help to reduce pollution. Because they support diverse food webs, they make integrated pest management (IPM) more efficient, thus reducing the need for pesticides. Largely evergreen native tree and shrub canopies intercept winter rainfall that then infiltrates and percolates into and through the soil, reducing erosion and sedimentation. In sharp contrast to the negative impacts of lawns, pavement and artificial turf, the deep roots of many native plants, including native perennial grasses, also help us reap these same benefits.

**In sum, increasing the abundance and diversity of native plants should be a main goal of the new Housing Element.**

*Please use backside of page for additional comments, if needed. This comment form may be emailed to [envplanning@marincounty.org](mailto:envplanning@marincounty.org) or mailed to the attention of Rachel Reid, prior to January 24, 2022, at the Marin County Community Development Agency - Planning Division, 3501 Civic Center Drive, Suite 308, San Rafael, CA 94903.*

## Hall, Chelsea

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**From:** pgsilva <pgsilva@sonic.net>  
**Sent:** Monday, January 24, 2022 2:45 PM  
**To:** EnvPlanning  
**Subject:** Marin Housing Element Scoping Comments  
**Attachments:** MCBIMarinHousingElementScoping24Jan2022.pdf

Dear Rachel -

Attached please find comments for the Housing Element scoping process, which I am submitting on behalf of the Marin Biodiversity Corridor Initiative (MBCI). As indicated at the bottom of the form, we will be happy to provide more documentation for our comments if that could be useful.

All the best,

Paul

--

Dr. Paul G. da Silva

415-461-3210

"What have we done today to address the global diversity crisis?"

**MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY  
PLANNING DIVISION  
PUBLIC SCOPING SESSION  
ENVIRONMENTAL IMPACT REPORT FOR  
HOUSING AND SAFETY ELEMENT UPDATES  
WRITTEN COMMENT FORM  
January 11, 2022**

**Name/Affiliation:** Dr. Paul da Silva/ Marin Biodiversity Corridor Initiative  
(MBCI)

**Address:** 55 Corte Solano

**City:** Larkspur    **Zip Code:** 94904-2328    **Telephone:** 415-461-3210

***Please provide comments and concerns regarding the environmental effects of the proposed project or the environmental process below.***

Recent international, national, state and local developments have highlighted the importance of our global biodiversity crisis and the need for all governments and agencies to address it in their planning processes. The United Nations *Making Peace with Nature* report named biodiversity loss as one of our three main environmental threats, along with climate change and pollution. The Conference of Parties (COP-15), soon to resume in Kunming, China, is bringing people together from all over the world to come up with specific actions. The California Biodiversity Initiative has prioritized action at the state level, while the designation of the first Marin Biodiversity Day last October 27<sup>th</sup> by the Marin County Board of Supervisors is one example of local recognition of the crisis.

Various iterations of the Marin Countywide Plan have recognized different corridors within the county. In the 1970's the predominant thinking was that the western, more rural corridors were the main areas for conservation, while the eastern, more urbanized corridors were where conservation would be sacrificed in favor of providing the bulk of the housing for the population. This paralleled the prevailing scientific consensus that urban and suburban areas had little conservation value and the shared understanding that the health of the people living in these areas could best be improved by giving them access to recreation in other, more conserved areas.

Much has changed since the 1970's. There is now growing scientific recognition that urban and suburban areas can and must play important roles in biodiversity conservation. There is also increased awareness of the connection between the biodiversity of urban and suburban areas and the health of people who live in them. Inequities in biodiversity are correlated with inequities in key human health variables.

Increased focus on biodiversity brings with it not only the opportunities to improve human and environmental health, but also to deal with other important challenges such as heightened fire danger, increased population density, and water scarcity (particularly in light of recent extreme drought conditions that are exacerbated by increasing population density).

*Key actions that could increase biodiversity in these areas are:*

1. Increase total amount of areas dedicated to living plants as opposed to structures, pavement, “dead” roofs, and artificial turf.
2. Increase total proportions of native plants. Although critical thresholds for total biodiversity support are around 70%, most Marin neighborhoods fall short of that; many are “biodiversity deserts.” Non-native turf and exotic plants have evolved with different weather, soil, and water requirements and are more likely to need supplemental water (which taxes our increasing limited water supply), fertilizers (which can pollute water) and pesticides (which threaten beneficial, non-target insects). Looking critically at most yards in Marin, it is not a stretch to say that no Marin neighborhood currently meets the 70% threshold.
3. Increase heterogeneity of habitat. This includes not only the diversity of the plants, but also the provision of bare soil for ground-nesting bees and the inclusion of swales and other water features for wildlife in general. Many of these factors can also be important in reducing fire danger and improving human health.

(Background references and documentation are available on request.)

**Please use backside of page for additional comments, if needed. This comment form may be emailed to [envplanning@marincounty.org](mailto:envplanning@marincounty.org) or mailed to the attention of Rachel Reid, prior to January 24, 2022 , at the Marin County Community Development Agency - Planning Division, 3501 Civic Center Drive, Suite 308, San Rafael, CA 94903.**



## Hall, Chelsea

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**From:** Marin County <notifications@engagementhq.com>  
**Sent:** Tuesday, January 4, 2022 3:46 PM  
**To:** notifications@engagementhq.com; Tanielian, Aline; Taylor, Tammy  
**Subject:** A new question has been added to Submit comments!

Hi there,

Just a quick heads up to let you know that a new question has been asked at Marin County Housing and Safety Elements Environmental Review by Suzanne Sadowsky.

The question that was asked is:

Will the scoping session address environment issues pertaining to stream conservation in the San Geronimo Valley, waste water treatment issues regarding septic failures the Valley and possibilities of a new community waste treatment facility in the Valley (Woodacre Flats) and also alternatives to water based residential toilets, e.g. incinerated toilets, and possibilities for expanded grey water systems.,

Please DO NOT reply to this email. If you want to provide an answer to this question, sign into your site and respond to the question from within the Q & A tool.

Regards

Bang The Table Team

## Hall, Chelsea

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**From:** Marin County <notifications@engagementhq.com>  
**Sent:** Monday, January 10, 2022 9:42 AM  
**To:** notifications@engagementhq.com; Tanielian, Aline; Taylor, Tammy  
**Subject:** A new question has been added to Submit comments!

Hi there,

Just a quick heads up to let you know that a new question has been asked at Marin County Housing and Safety Elements Environmental Review by Jenny Silva.

The question that was asked is:

The housing element process and environmental review is an ideal opportunity for Marin to reconsider land use policies to reduce our car dependency. Car emissions create 40% of greenhouse emissions. Marin's development has put in place land use rules that have created a car dependent culture. I encourage Marin to look at options for reducing car use, particularly in terms of building more walkable communities. Safe routes to school have encourage students to walk or bike to school. Enabling more kids to live within walking distance of our schools would have the biggest impact. Retail should not be separated from residential. People love having a nearby corner store. Walkable neighborhoods are highly desired. There is much we can do with zoning and land use policy to reduce our dependence on cars.

Please DO NOT reply to this email. If you want to provide an answer to this question, sign into your site and respond to the question from within the Q & A tool.

Regards

Bang The Table Team

## Hall, Chelsea

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**From:** Kathryn Peisert <kathryn@peisert.net>  
**Sent:** Tuesday, January 11, 2022 8:06 AM  
**To:** EnvPlanning  
**Subject:** Housing plan

Questions to address at the forum today (other than the obvious environmental impacts):

1. Where will the extra water come from for these new residents? What kinds of collaboration and strategies are being worked out with the water districts?
2. Traffic congestion issues — how can we encourage the building of new housing near public transportation and in turn, provide more, better, faster access to public transportation so people will actually ride? (I was also wondering if there have been any data on people being more likely to contract COVID if they take public transportation — if we can very publicly dispel fears about that perhaps ridership would go up.)
3. Can the new housing be carbon neutral and/or LEED certified? Solar panels, gray water systems, all electric appliances, recycling and compost options so easy to do that it's harder to throw things in the trash, and built with sustainable materials?
4. Wouldn't it be amazing if the people who need jobs the most could be hired to help do the building?
5. How will we guarantee that the new housing will actually solve problems for no and low-income people, and what are the guarantees that the county won't overpay the developers? Let's carefully outline a plan that can be an economic win for everyone involved, not just the developers.
6. Is there a review of the current empty commercial spaces, to determine how viable those are to remain commercial when COVID is over — could some of those spaces become housing instead? (Does BioMarin need all of that office space still?)

I'm sure there's more...the idea being that new housing impacts just about everything else. So how to minimize those impacts and do it in a smart way so that the plan actually helps the problem it is trying to solve, rather than bringing in more rich people to Marin and making prices go even higher.

Thanks,  
Kathryn  
San Rafael

## Hall, Chelsea

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**From:** Marin County <notifications@engagementhq.com>  
**Sent:** Tuesday, January 11, 2022 1:35 AM  
**To:** notifications@engagementhq.com; Tanielian, Aline; Taylor, Tammy  
**Subject:** A new question has been added to Submit comments!

Hi there,

Just a quick heads up to let you know that a new question has been asked at Marin County Housing and Safety Elements Environmental Review by Mary Miller.

The question that was asked is:

Please increase affordable development in infill areas in Southern Marin. This will reduce noise and air pollution from commuters traveling from Sonoma and Marin to jobs in SF. Bus and ferry travel to SF from there is faster and thus more likely to be actually used.

Please DO NOT reply to this email. If you want to provide an answer to this question, sign into your site and respond to the question from within the Q & A tool.

Regards

Bang The Table Team

## Hall, Chelsea

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**From:** pbn@sf1.net  
**Sent:** Thursday, January 13, 2022 3:34 PM  
**To:** EnvPlanning  
**Subject:** Housing and Safety Elements SURVEY??!

Peter Newman would like information about:

Planning sent me a postcard with a QR code link to the Housing and Safety Elements Short Survey... but I am trying to access the survey via your web site (on my laptop) -- and it appears the survey is not accessible on-line??!

The county should make the survey accessible by computer as well as by smart phone -- as some of us older citizens may not be able or willing to access the survey via their phones. I am technically capable of doing that, but the screen is too small for me and I want to be able to view the survey on my computer.

There is no excuse, other than a lapse of judgement, that can justify only making the survey accessible by a QR code used by phones only.

Peter Newman

## Hall, Chelsea

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**From:** Marin County <notifications@engagementhq.com>  
**Sent:** Monday, January 24, 2022 3:30 PM  
**To:** notifications@engagementhq.com; Tanielian, Aline; Taylor, Tammy  
**Subject:** A new question has been added to Submit comments!

Hi there,

Just a quick heads up to let you know that a new question has been asked at Marin County Housing and Safety Elements Environmental Review by Neighbor.

The question that was asked is:

As the more detailed study of environmental and infrastructure constraints is developed, I would like to point out specific constraints in the area around McPhail's School in Santa Venetia: Biological Resources – the area at and surrounding the McPhail's school site in Santa Venetia is extremely rich in biodiversity; and, having the same habitat and makeup as what we have in China Camp State park less than 1 mile away, the McPhail's site now serves as a defacto sanctuary for wild animals of a very diverse nature. The long-term neglect by the San Rafael School District has for most intents and purposes resulted in the return of this land to its natural state. Geology and Soils – the land underlying a significant portion of the McPhail's school site was created by a landfill project in the late 1950's. Liquefaction and potential instability is a possible concern, especially if the substrate is similar to the surrounding marsh that it was before the fill was added. Hydrology and Water Quality – the land at McPhail's is near or just above sea level; when the tide comes in via Gallinas Creek, the water floods areas near or at the edge of the property. As a proximate neighbor to the property for almost 20 years, I am seeing higher levels of flooding year after year. There is also a potential impact to the broader Santa Venetia neighborhood, which regularly battles flooding with a system of levies and pump stations throughout the entire area. Land Use and Planning – The San Rafael School District, which owns the 14 acres at the McPhail's school site, has long neglected this property, with only a few and sudden starts and stops about how it would improve the property and make better use of the land and buildings. The neighbors have long-tried to work with SRSD and Marin County to establish a plan, with several very feasible ideas having been proposed, but to no avail. The neighbors overall feel exasperated and frustrated that SRSD has not been a better partner with the community, so I suspect there will be a very strong pushback from the community if some of the land-use ideas that get proposed for McPhail's that do not align with already discussed and accepted ideas, such as Wild Care, park and recreation, education, and others. Also, the McPhail's site is specifically discussed in the Santa Venetia Community Plan. Any land use planning discussion for McPhail's must start with a reference to the SVCP. Public Services – there are essentially no public services near the McPhail's area, such as shopping, grocery, public transportation, health care; other than a single micro-bus service on Vendola Drive, any access to these types of services requires private transportation 2 miles west, toward the Civic Center and 101. Transportation – as mentioned above, the only public transportation servicing the McPhail's area is an infrequent small-bus service on Vendola Drive. There is also a history of traffic congestion along North San Pedro Road with private vehicle congestion along with school buses traffic to Santa Venetia school, JCC and other high-traffic areas along NSPR. Thanks, Jon Metcalf

Please DO NOT reply to this email. If you want to provide an answer to this question, sign into your site and respond to the question from within the Q & A tool.

Regards

Bang The Table Team

MARIN COUNTY HOUSING AND SAFETY ELEMENT  
NOP SCOPING MEETING – Tuesday, January 11, 2022 6:00-8:00pm

Jack Krystal 06:19 PM Will the studies include future housing on the bay or other water bodies.

A: Yes, the County has a large number of units to build. This will also be informed by Safety Element location/site findings.

JK – Water bodies? Plan and execute for affordable and workforce housing. Design review members, need to come up with a plan with EIR Take future conditions into account.

Yes

Suzanne Sadowsky 06:27 PM Will the EIR address septic issues in the San Geronimo Valley and stream conservation ordinance that is being developed?

A: In those areas, yes. The stream ordinance is not in effect now, but planning commission and Board of Supervisors hearings will occur. Marin has restrictions on development within the Stream Conservation Area zones. The new SDG will likely be stricter than the than current requirements now out so to the degree that it constrains future development, that would be something that the housing element would take into effect.

jim sternberg 06:29 PM will the scope of this project include addressing sea level rise issues in existing housing areas such as Tam Valley?

A: Yes, this is a vulnerability and will be evaluated. SLR can be a hazard and will be evaluated in the vulnerability assessment. The Safety and Housing elements would interact that these points.

Pamela Morris 18:34:29 Can a schedule be made available that identifies what is the scale schedule for the cities and towns, so that the issues can be looked at holistically and combined.

susan Stompe 06:30 PM Will the EIR be separate for housing or safety, or combined?

A: Together

Matthew Estipona 06:36 PM How will the county engage with the access and functional needs community to ensure that some housing stock is allocated for affordable and accessible units?

A: The housing element includes income level consideration, special needs populations and folks with disabilities. Yes, the county will specifically analyze that category of person, specifically their needs and plan for housing to meet those needs.

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## **Appendix B: Background Project Information**

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# CHAPTER 5: GOALS, POLICIES, AND PROGRAMS

## Overview

State law requires each jurisdiction to address how it will satisfy the objectives for new residential units as represented by the Regional Housing Needs Allocation (RHNA). Means of achieving the development of these units should be outlined through policies and programs in the Housing Element.

Marin County's housing policies and programs have been revised to reflect the major themes identified through the County's community outreach process and a critical evaluation of the programs and policies from the 2015 Housing Element (found in Appendix B: Evaluation of 2015 Housing Element Programs). Implementing programs are grouped by the housing goals described below. Additionally, under AB 686, policies and programs must be examined under the lens of affirmatively furthering fair housing and a commitment to specific meaningful actions (Appendix D: Affirmatively Furthering Fair Housing).

### **Goal 1: Use Land Efficiently**

Use Marin's land efficiently to meet housing needs and implement smart and sustainable development principles.

### **Goal 2: Meet Housing Needs through a Variety of Housing Choices**

Respond to the broad range of housing needs in Marin County by supporting a mix of housing types, densities, affordability levels, and designs.

### **Goal 3: Ensure Leadership and Institutional Capacity**

Build and maintain local government institutional capacity and monitor accomplishments to respond to housing needs effectively over time.

### **Goal 4: Combat Housing Discrimination, Eliminate Racial Bias, Undo Historic Patterns of Segregation**

Lift barriers that restrict access in order to foster inclusive communities and achieve racial equity, fair housing choice, and opportunity for all Californians.

Policies are organized around these four central goals, with an emphasis on facilitating development of housing affordable to lower and moderate income households in Marin. Strategies to aid in achieving these goals include:

- Provide clear standards and incentives for affordable and special needs housing developments to minimize risk and costs to funders and developers.
- Minimize discretionary review; streamline the permitting process.
- Establish programs appropriate to various Marin locations (urban vs. rural) and be responsive to the local community.

These ideas have been carried through in the Housing Element update to be implemented with a series of programs. In direct response to public input, these new programs have been included in the 2023-2031 Housing Element:

- Program 5: SB 9 Mapping Tool
- Program 7: Religious and Institutional Facility Housing Overlay
- Program 17: Housing for Seniors
- Program 18: Short-Term Rentals
- Program 31: Tenant Protection Strategies
- Program 32: Community Engagement

Upon adoption of the Housing Element, the County will provide it to all water and sewer service districts and notify all districts of the requirement to prioritize water and sewer service allocation for new affordable housing development (Government Code Section 65589.7).

## Goals and Policies

### Housing Goal 1: Use Land Efficiently

Use Marin's land efficiently to meet housing needs and to implement smart and sustainable development principles.

#### Policy 1.1: Land Use

Enact policies that encourage efficient use of land to foster a range of housing types in our community.

#### Policy 1.2: Regional Housing Needs Assessment

Maintain an adequate inventory of residential and mixed-use sites to fully accommodate the County's RHNA by income category throughout the planning period.

#### Policy 1.3: Housing Sites

Recognize developable land as a scarce community resource. Protect and expand the

supply and residential capacity of housing sites, particularly for lower income households.

#### **Policy 1.4: Development Certainty**

Promote development certainty and minimize discretionary review for affordable and special needs housing through amendments to the Development Code.

#### **Policy 1.5: Design, Sustainability, and Flexibility**

Enact programs that facilitate well designed, energy efficient development and flexibility of standards to encourage outstanding projects.

### **Housing Goal 2: Meet Housing Needs through a Variety of Housing Choices**

Respond to the broad range of housing needs in Marin County by supporting a mix of housing types, densities, affordability levels, and designs.

#### **Policy 2.1: Special Needs Groups**

Expand housing opportunities for special needs groups, including seniors, people living with disabilities (including mental, physical, and developmental disabilities), agricultural workers, individuals and families experiencing homelessness, single-parent families, large households, lower income (including extremely low-income) households, and other persons identified as having special housing needs in Marin County.

#### **Policy 2.2: Supportive Services**

Link housing to Department of Health and Human Services programs in order to coordinate assistance to people with special needs.

#### **Policy 2.3: Workforce Housing**

Implement policies that facilitate housing opportunities to meet the needs of Marin County's workforce, especially those earning lower incomes.

#### **Policy 2.4: Incentives for Affordable Housing**

Continue to provide a range of incentives and tools to ensure development certainty and cost savings for affordable housing providers.

#### **Policy 2.5: Preserve Existing Housing**

Protect and enhance the housing we have and ensure that existing affordable housing remains affordable.

### **Policy 2.6: Preserve Permanent Housing Inventory**

Preserve our housing inventory for permanent residential uses. Discourage or mitigate the impact of short-term rentals and units unoccupied for extended periods of time.

### **Housing Goal 3: Ensure Leadership and Institutional Capacity**

Build and maintain local government institutional capacity and monitor accomplishments to respond to housing needs effectively over time.

#### **Policy 3.1: Community Participation**

Maintain an open channel of communications among the community, County staff, and decision makers. Ensure inclusive and meaningful efforts are undertaken to obtain input from diverse groups in the community. When needed, employ additional efforts to include those that typically excluded or under-represented.

#### **Policy 3.2: Coordination**

Take a proactive approach in local housing coordination, policy development, and communication. Share resources with other agencies to effectively create and respond to opportunities for achieving housing goals.

#### **Policy 3.3: Research, Monitoring, and Evaluation**

Perform effective management of housing data relating to Marin County housing programs, production, and achievements. Monitor and evaluate housing policies on an ongoing basis and respond expeditiously to changing housing conditions and needs of the population over time.

#### **Policy 3.4: Funding**

Actively and creatively seek ways to increase funding resources for affordable and special needs housing.

### **Housing Goal 4: Combat Housing Discrimination, Eliminate Racial Bias, Undo Historic Patterns of Segregation**

Lift barriers that restrict access in order to foster inclusive communities and achieve racial equity, fair housing choice, and opportunity for all Californians.

#### **Policy 4.1: Tenant Protection**

Implement policies and actions to protect tenants from unlawful evictions as well as direct and indirect (economic) displacement, and to promote greater education around tenants' rights.

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### **Policy 4.2: Fair Housing Outreach and Education**

Proactively outreach to and educate the community about fair housing rights and responsibilities.

### **Policy 4.3: Affirmatively Further Fair Housing**

Ensure that the County's land use, development, and housing policies further the goal of equal access to housing opportunities.

## **Implementing Programs**

A housing program can implement more than one goal and multiple policies. Furthermore, some programs and actions may target specific areas of implementation in order to bridge existing service gaps, access to resources, and disproportionate housing needs.

### **Housing Supply**

#### **Program 1: Adequate Sites for RHNA and Monitoring of No Net Loss**

The County of Marin has been allocated a need of 3,569 units (1,100 very low income, 634 low income, 512 moderate income, and 1,323 above moderate income units). Based on projected ADUs and entitled projects, the County has met 475 of its RHNA, with a remaining RHNA of 3,094 units (1,458 lower income, 428 moderate income, and 1,208 above moderate income units).

To accommodate this remaining RHNA, the County has identified an inventory of sites with potential for redevelopment over the eight-year planning period. The inventory includes sites that can accommodate additional housing (689 units) under current Countywide Plan (CWP) and Development Code. The inventory also includes sites that will be rezoned/upzoned concurrent with this Housing Element update. Sites identified for rezoning/upzoning can accommodate 2,677 units (see Table H-5.1). The County is committed to redesignating and rezoning accordingly by January 31, 2023. Appendix C contains a detailed parcel listing of properties in the inventory, including those that will be redesignated/rezoned concurrent with the Housing Element update.

**Table H-5.1: Summary of Areas to be Rezoned**

Existing Zoning	Acreage	Parcels	RHNA Units
Agriculture and Conservation	288	3	275
Agriculture Limited	339	11	911
Agriculture Residential Planned	84	4	127
Planned Commercial	4	1	100
Public Facilities	46	7	224
Residential Agriculture	10	3	31
Residential Commercial Multiple Planned	16	20	241
Residential Multiple Planned	616	14	245
Residential Single Family	10	14	156
Residential Single Family Planned	29	28	293
Resort and Commercial Recreation	1	1	36
Retail Business	2	2	36
Village Commercial Residential	0	1	2
<b>Total</b>	<b>1,445</b>	<b>109</b>	<b>2,677</b>

To ensure that the County complies with Government Code Section 65863 (No Net Loss), the County will monitor the use of residential and mixed-use acreage included in the sites inventory to ensure an adequate inventory is available to meet the County’s RHNA obligations throughout the planning period. To ensure sufficient residential capacity is maintained to accommodate the RHNA, the County will develop and implement a formal, ongoing, project-by-project evaluation procedure pursuant to Government Code Section 65863. Should an approval of development result in a reduction of residential capacity below what is needed to accommodate the remaining need for households at an income level, the County will identify replacement sites as part of the findings for project approval, or if necessary, rezone sufficient sites to accommodate the shortfall and ensure “no net loss” in capacity to accommodate the RHNA within six months.



Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Complete redesignation/rezoning of 1,445 acres as outlined in Table H-5.1 to fully accommodate the RHNA. Redesignation and rezoning for adequate sites is being taken concurrently with the Housing Element update and to be completed prior to Housing Element adoption before January 31, 2023. Specifically, the County will completely revamp the Housing Opportunity sites (HOD) policy language in the CWP to outline: <ul style="list-style-type: none"> <li>○ Allowable density</li> <li>○ Maximum and minimum number of units</li> <li>○ Site constraints if any</li> <li>○ Objective Design Standards category</li> </ul> </li> <li>▪ By the end of 2022, amend the CWP to adjust the Inland Rural/City-Center corridor boundary and to ensure consistency between CWP and zoning districts.</li> <li>▪ Ongoing, maintain an inventory of the available sites for residential development and make it available on County website. Update sites inventory annually to reflect status of individual sites.</li> <li>▪ By January 2024, implement a formal evaluation procedure pursuant to Government Code Section 65863 to monitor the development of vacant and nonvacant sites in the sites inventory and ensure that adequate sites are available to meet the remaining RHNA by income category.</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	1.1, 1.2, and 1.3

**Program 2: By Right Approval**

Pursuant to Government Code Section 65583.2, reusing the following types of sites in the County’s sites inventory for lower income RHNA are subject to by-right approval exempt from CEQA and subject only to design review based on objective standards, when a project includes 20 percent of the units affordable to lower income households and no subdivision is proposed:

- Vacant sites that were identified in the County’s 4<sup>th</sup> and 5<sup>th</sup> cycles Housing Element as sites for lower income RHNA; and
- Nonvacant sites that were identified in the County’s 5<sup>th</sup> cycle Housing Element as sites for lower income RHNA.

Parcels that are subject to by-right approval pursuant to State law are identified in Appendix C.

In addition, the County may consider expanding the scope of streamlining:

- For sites not subject to Section 65583.2 - projects that include 20 percent of the units affordable to homeowners at 60 percent AMI or to renters at 50 percent AMI; and/or
- 100 percent affordable projects on any Housing Element sites.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ By December 2022, concurrent with the Development Code and CWP update to provide adequate sites for RHNA (see Program 1), update the Development Code to address the by-right approval requirements.</li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund
Relevant Housing Policies	1.3 and 1.4

**Program 3: Replacement Housing**

Development on all nonvacant sites designated in the Housing Element, at all income levels, that contain existing residential units, or units that were rented in the past five years, is subject to the replacement housing requirements specified in Government Code sections 65583.2 and 65915.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>By December 2022, as part of the redesignation and rezoning being undertaken concurrently with the Housing Element update (see Program 1, update the Development Code to address the replacement requirements).</li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund
Relevant Housing Policies	1.1, 1.3, and 2.5

**Program 4: Accessory Dwelling Units**

Accessory Dwelling Units (ADUs) are an important resource to provide lower and moderate income housing in the unincorporated County. To facilitate ADU production, the County will:

- Dedicate a specific page on the County website to provide information and resources for ADU construction.
- Dedicate an ombudsman position to help applicants navigate the pre-development phase of ADU construction.
- Develop an ADU construction guide to clarify the permit application process and requirements. The guide will outline the required review by various departments and fees required.
- Provide financial assistance to income-qualified property owners to build ADUs using State funds (such as Cal HOME funds).

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>Permit on average 35 ADUs or JADUs per year (280 ADUs or JADUs over eight years).</li> <li>Update ADU webpage semi-annually, or more frequently as needed, to ensure information addresses questions</li> </ul>
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	<p>raised by applicants.</p> <ul style="list-style-type: none"> <li>▪ By December 2023, create an ombudsman position to help property owners navigate the ADU pre-development process.</li> <li>▪ Annually, pursue and allocate financial incentives to support ADU construction with the annual goal of assisting 5 lower income households with ADU construction or deed restricting 5 ADUs as affordable housing.</li> <li>▪ By January 31, 2027, review the production of ADUs to verify that Housing Element projections are accurate. If production estimates are below estimated amounts, revise as appropriate, the County’s ADU strategies to help achieve overall goal of at least 280 ADUs during the planning period.</li> </ul>
Primary Responsible Departments	Housing; Planning; Building; Environmental Health Services; Public Works
Funding Sources	General Fund; CalHome; Marin County Collaborative REAP
Relevant Housing Policies	1.3, 1.4, 2.4, and 3.4

**Program 5: SB 9 Mapping Tool**

SB 9 (Government Code Section 65852.21) is a new regulation that allows property owners to build additional units on their properties. In the unincorporated County, properties eligible to utilize SB 9 are limited to those in urbanized areas and in urban clusters, in addition to other exclusions included in the statute. The County will facilitate the SB 9 process by developing a mapping tool to help property owners determine if their properties may be eligible to utilize SB 9 to add new units onsite.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ By December 2024, develop and implement an online mapping tool that will identify areas in the unincorporated area that are eligible to use SB 9.</li> </ul>
Primary Responsible	Housing; Planning; Public Works

Departments	
Funding Sources	Marin County Collaborative REAP Funds
Relevant Housing Policies	1.1, 3.1, 3.2, and 3.3

**Program 6: Efficient Use of Multi-Unit Land**

The County permits single-unit homes in all residential zones and nonresidential zones that permit housing, potentially reducing the achievable density in multi-unit development. Establishing minimum densities will ensure efficient use of the County’s multi-unit land and prohibit the construction of new detached single-unit homes on multi-unit zoned property. Existing single-unit homes on multi-unit zoned property can remain and limited expansion or improvement, or reconstruction to replace units damaged due to accidents or disasters would be permitted.

To facilitate efficient use of land, some jurisdictions have also established target densities (tied to the calculation of RHNA potential, for example) to ensure no net loss of capacity as development occurs.

Also, currently no conventional zones in the County permit multi-unit housing, and only ten percent of the parcels are zoned to permit multi-unit residential use. This limited land available solely for multi-unit use is a potential constraint to housing development.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ By December 2023, amend the Development Code to:               <ul style="list-style-type: none"> <li>○ Establish minimum densities for multi-unit and mixed-use zones.</li> </ul> </li> <li>▪ By December 2023:               <ul style="list-style-type: none"> <li>○ Explore and, if appropriate, develop target density for each zone.</li> <li>○ Create a residential combining district that allows for form-based objective development standards rather than discretionary review.</li> </ul> </li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund

Relevant Housing Policies	1.1, 2.4, and 2.5
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**Program 7: Religious and Institutional Facility Housing Overlay**

Government Code Section 65913.6 allows a religious institution to develop an affordable housing project at a place of worship owned by the religious institution even if the development requires the religious institution to reduce the number of religious-use parking spaces available. This bill applies only to religious facilities located in zones that allow residential uses.

The County will establish a Religious and Institutional Facility Housing Overlay with the following potential provisions:

- Expanding the provisions of Section 65913.6 to other institutional uses, such as schools and hospitals, as well as religious facilities located in zones that currently do not allow residential uses.
- Allowing religious and institutional uses to construct up to four ADUs and JADUs onsite.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Beginning in 2023, conduct outreach to religious and institutional facilities regarding the Overlay opportunity.</li> <li>▪ By December 2024, establish a Religious and Institutional Facility Housing Overlay to extend the provisions of Section 65913.6 to other institutional and religious uses.</li> </ul>
Primary Responsible Departments	Planning, Housing
Funding Sources	General Fund
Relevant Housing Policies	1.3 and 2.4

**Program 8: Development Code Amendments**

The County will amend the Development Code to address the following to facilitate development of a variety of housing types:

- **Residential Use in Mixed-Use Development:** - The County allows residential uses on the upper floors and residential units are limited between 25 and 29 percent of the floor area. Amend the Development Code to allow at least 50

percent of the floor area as residential use.

- **Height Limit:** The 30-foot height limit is potentially constraining to achieving a density of 30 units per acre. Amend the Development Code to increase the height limit to 45 feet.
- **Accessory Dwelling Units:** Currently, the County’s ordinance does not allow an ADU to be sold or otherwise conveyed separately from the primary dwelling unit. However, State law makes an exception if the property is owned by a nonprofit organization. The County will amend the ADU regulations to be consistent with State law.
- **Agricultural Worker and Employee Housing:** The County’s provisions for agricultural worker housing is not consistent with the State Employee Housing Act. Furthermore, the Development Code does not contain provisions for employee housing. Pursuant to the Employee Housing Act, any housing for six or fewer employees (in any industry) should be permitted as single-unit residential use. The County will amend agricultural worker provisions in the Development Code to be consistent with State law.
- **Residential Care Facilities:** The County permits residential care facilities for six or fewer persons in all residential zones. For residential care facilities for seven or more persons, a conditional use permit is required. The County will revise the Development Code to permit or conditionally permit large residential care facilities in all zones that permit residential uses, as similar uses in the same zone, and to ensure the required conditions for large facilities are objective and provide certainty in outcomes.
- **Supportive Housing:** Pursuant to State law (Government Code Section 65650 et seq.), supportive housing developments of 50 units or fewer that meet certain requirements must be permitted by right in zones where mixed-use and multi-unit development is permitted. Additionally, parking requirements are prohibited for supportive housing developments within one half mile of a transit stop. The County will amend Title 24 of the Municipal Code to address the parking requirements to comply with State law (see Program 9).
- **Emergency Shelters:** Government Code Section 65583 requires that parking standards for emergency shelters be established based on the number of employees only and that the separation requirement between two shelters be a maximum of 300 feet. The County Development Code will be revised to comply with this provision.
- **Low Barrier Navigation Center (LBNC):** Government Code section 65660 et seq. requires that LBNCs be permitted by right in mixed-use and nonresidential zones that permit multi-unit housing. The Development Code will be amended

to include provisions for LBNC.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>By December 2023, amend the Development Code as outlined above to facilitate a variety of housing types, especially for special needs populations.</li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund
Relevant Housing Policies	1.1, 2.1, 2.3, and 2.4

### Program 9: Parking Standards

The County’s current parking standards are codified in Title 24 of the Municipal Code. The parking standards will be updated to address the following:

- Parking for Multi-Unit Housing:** The County current standards are slightly higher than the standards established for the State density bonus program. The County will reduce the parking requirements to match the State density bonus requirements.
- Supportive Housing:** Pursuant to State law (Government Code Section 65650 et seq.), parking requirements are prohibited for supportive housing developments of 50 units or fewer meeting certain requirements and located within one-half mile of a transit stop.
- Emergency Shelters:** Government Code Section 65583 requires that parking standards for emergency shelters be established based on the number of employees only, not based on shelter capacity (such as number of beds).

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>By December 2023, amend Title 24 of the Municipal Code to reduce parking requirements for multi-unit housing, and to revise parking requirements for supportive housing meeting certain criteria and emergency shelters.</li> </ul>
Primary Responsible Departments	Public Works
Funding Sources	General Fund



Relevant Housing Policies	1.1 and 2.1
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### Program 10: Objective Development Standards for Off-Site Improvements

Development projects in the County are required to make on- and off-site improvements. The Objective Design Standards that the County has been working on impact only on-site improvements and cover a property up to the right of way. Many rural communities in the unincorporated areas do not have standardized requirements for off-site improvements (such as streetscape improvements), which can make development uncertain and add costs.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>By December 2025, establish objective development standards for off-site improvements.</li> </ul>
Primary Responsible Departments	Housing; Planning; Public Works
Funding Sources	General Fund
Relevant Housing Policies	1.1 and 1.5

### Program 11: Water Availability

Availability of water is a significant constraint to housing development in the County and beyond. The County will pursue several strategies to mitigate this constraint to the extent feasible.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>Continue to promote sustainability strategies (such as water conservation and recycling).</li> <li>Beginning in 2023, collaborate with water service providers to conduct a strategic water supply assessment in 2023 to evaluate increased supply within Marin (e.g., increased reservoir capacity, new reservoir(s), increase use of recycled water, desalinization plant) and external to Marin (e.g., EBMUD, Russian River water).</li> <li>Upon adoption of the Housing Element, submit it to all water districts and notify all water districts of the requirement to prioritize water allocation for new</li> </ul>
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	affordable housing development (Government Code Section 65589.7).
Primary Responsible Departments	Housing
Funding Sources	General Fund, State infrastructure funds
Relevant Housing Policies	1.5

**Program 12: Septic for Multi-Unit Housing**

Parts of the County have no sewer services, with properties relying on individual onsite septic systems. The County will pursue strategies to address this constraint to multi-unit development.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2022, develop standards for multi-unit development in septic areas.</li> <li>▪ In 2023 initiate a study to identify alternative approaches to sewage disposal (e.g., package plants, community systems, incinerator toilets, etc.). Upon completion of the study, update by 2024 the County’s methodology for calculating septic capacity.</li> </ul>
Primary Responsible Departments	Housing; Environmental Health Services
Funding Sources	General Fund
Relevant Housing Policies	1.5

**Special Needs Housing**

**Program 13: Reasonable Accommodation**

Reasonable Accommodation provides flexibility in the implementation of land use and development regulations in order to address the special housing needs of persons with disabilities. The review and approval process of Reasonable Accommodation

requests may delay a person’s ability to access adequate housing. The County will expedite Reasonable Accommodation requests. (See also Program 21: Rehabilitation Assistance for funding available to assist lower income households in making accessibility improvements.)

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>Beginning in 2023, offer expedited review and approval of Reasonable Accommodation requests.</li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund
Relevant Housing Policies	2.1 and 4.3

#### **Program 14: Universal Design and Visitability**

Universal design is the design of buildings or environments to make them accessible to all people, regardless of age, disability, or other factors. Universal design goes beyond ADA requirements but may add to the cost of construction. Typically, local governments incentivize the use of universal design principles.

Currently, visitability is a requirement for HUD-funded single-unit or owned-occupied housing. Visitability refers to housing designed in such a way that it can be lived in or visited by people who have trouble with steps or who use wheelchairs or walkers. The County may consider expanding the visitability requirement to multi-unit housing.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>In 2024, study policies and/or incentives to encourage requirements for universal design and visitability, and develop them by 2025 for implementation.</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	2.1 and 4.3

**Program 15: Housing for Farmworkers and Hospitality Workers**

Agricultural operations represent an important component of the County’s economic base. Most farming operations are small dairies, individually employing a small number of farmworkers. These farms often do not have the ability to provide housing for all their workers. Year-round fishery operations also employ a significant number of workers collectively. In addition, Marin County is a popular tourist destination. Farmworkers, fishery workers, and hospitality employees typically earn lower incomes and have limited affordable housing options. The County will explore policies that facilitate the provision of affordable housing for these workers. Potential considerations include:

- Setting aside a specific percentage of affordable housing units for farmworkers within larger affordable housing developments.
- Partnering with other jurisdictions, farm operators, hotels, and other hospitality employers in the region to contribute to an affordable housing fund or a community land trust. Funding collected can be used to acquire, develop, and/or rehabilitate housing for farmworkers.
- Requiring hospitality employers to provide housing to temporary employees during peak seasons.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ By December 2025, develop strategies for addressing farmworker and hospitality worker housing, with the goal of increasing housing for these employees by 20 percent.</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	2.1 and 2.3

**Program 16: Project Homekey**

The County is actively pursuing Project Homekey opportunities in order to provide permanent supportive housing for people experiencing homelessness. Homekey is an opportunity for the County to pursue funding for the development of a broad range of housing types, including but not limited to hotels, motels, hostels, single-family homes, multi-unit apartments, adult residential facilities, and manufactured housing, and to convert commercial properties and other existing buildings to permanent or interim

housing for the homeless.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2023, identify locations that may be appropriate as Project Homekey sites and conduct outreach to interested nonprofit developers to pursue funding from HCD.</li> <li>▪ Develop 20 units using Project Homekey over eight years.</li> </ul>
Primary Responsible Departments	Housing; Health and Human Services
Funding Sources	HCD Project Homekey Funds
Relevant Housing Policies	2.1, 2.2, and 4.3

### Program 17: Housing for Seniors

The County has a high proportion of aging residents. Many have expressed the need for additional senior housing options, specifically allowing seniors to trade their current homes for other housing that requires less maintenance, is designed to accommodate the mobility needs of seniors, and is more affordable. The County will pursue a variety of housing options for seniors.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2023, explore expansion of home match services to help match over-housed seniors with potential lower income tenants.</li> <li>▪ In 2024, develop incentives and development standards to facilitate various senior housing options (such as senior apartments/homes, co-housing, assisted living, etc.).</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	2.1 and 4.3

## Preservation of Housing

### Program 18: Short-Term Rentals

The County may explore options for limiting short-term rentals in order to preserve housing units for permanent residential use. Strategies may include:

- Prohibiting short-term rentals (no less than 30 days allowed)
- Limiting the number of days the unit can be used for short-term rentals
- Prohibiting short-term rentals in all multi-unit dwellings
- Allowing for short-term rentals if the property is the owner’s primary residence
- Benchmarking the number of short-term rentals allowed to no more than a specific percentage of the community’s rental housing stock

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2023, evaluate and adopt strategies for regulating short-term rentals.</li> </ul>
Primary Responsible Departments	Planning
Funding Sources	General Fund
Relevant Housing Policies	2.6 and 3.3

### Program 19: Vacant Home Tax

The vacancy rate in the unincorporated County is about 10 percent with close to 60 percent of vacant units used for recreational, seasonal, and occasional purposes. A vacant home tax is an emerging strategy for discouraging leaving homes unoccupied for extended periods of time.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2024, study the appropriateness of a vacant home tax as a strategy to discourage unoccupied housing units and increase revenue for affordable housing. If appropriate, pursue ballot measures in 2025 to establish tax.</li> </ul>
Primary Responsible Departments	Housing

Funding Sources	General Fund
Relevant Housing Policies	2.6

### Program 20: Monitoring of Rental Housing

The Marin County Landlord Registry was established in 2019 and requires landlords to report rents and general occupancy information for all rental properties subject to the Just Cause for Eviction ordinance. While the registry is designed to collect data on the rental market, the data provides an incomplete picture since a large portion of rental units are exempt from the Just Cause for Eviction ordinance.

Also, the County Development Code prohibits conversion of multi-unit rental units into condominiums unless the vacancy rate exceeds five percent and the change does not reduce the ratio of multi-unit rental units to less than 25 percent of the total number of dwelling units in the County.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Continue to implement the Landlord Registry and Condominium Conversion ordinance.</li> <li>▪ In 2024, expand Landlord Registry requirements to cover all rental units in the unincorporated County.</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	3.3 and 4.1

### Program 21: Rehabilitation Assistance

The County supports the housing rehabilitation needs of lower income households through:

- Residential Rehabilitation Loan Program: provides low-interest property improvement loans and technical assistance to qualified, very low income homeowners to make basic repairs and improvements, accessibility improvements, correct substandard conditions, and eliminate health and safety hazards.

- Funding assistance to Marin Center for Independent Living (MCIL) home modification program to increase independence and accessibility for renters and homeowners.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Provide rehabilitation loans to 10 households annually (80 households over eight years).</li> <li>▪ Provide support for 6 households to make accessibility improvements annually (48 households over eight years).</li> <li>▪ Continue to support nonprofit organizations in providing rehabilitation assistance to lower income renters and homeowners.</li> </ul>
Primary Responsible Departments	Housing and Federal Grants
Funding Sources	CDBG
Relevant Housing Policies	2.1, 2.5, 2.6, and 3.4

**Program 22: Habitability**

The County Department of Environmental Health’s Housing Services conducts inspections on residential structures of three or more units only. Single-unit homes and duplexes are not covered by inspection services.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ In 2025, expand the inspection services to cover the entire housing stock.</li> </ul>
Primary Responsible Departments	Environmental Health Services
Funding Sources	General Fund
Relevant Housing Policies	2.5 and 2.6



### Program 23: Preservation of At-Risk Housing

The County has an inventory of publicly assisted housing projects that offer affordable housing opportunities for lower income households. Most of these projects are deed restricted for affordable housing use long-term. However, 61 units are considered at high and very high risk of converting to market-rate housing. The County will work to preserve these at-risk units.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Annually monitor status of at-risk projects with the goal of preserving 100% of at-risk units.</li> <li>▪ Ensure tenants are properly noticed by the property owners should a Notice of Intent to opt out of low income use is filed. Notices must be filed three years, one year, and six months in advance of conversion.</li> <li>▪ In the event of a potential conversion, conduct outreach to other nonprofit housing providers to acquire projects opting out of low income use.</li> <li>▪ Consider a Community Opportunity to Purchase Act (COPA) program (see also Program 30: Tenant Protection Strategies).</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	Housing Trust Fund
Relevant Housing Policies	2.5, 2.6, 3.3, and 3.4

### Housing Affordability

#### Program 24: Inclusionary Housing

The County implements an Inclusionary Housing program requiring a 20 percent set aside of new units or lots in a development for affordable housing. Ownership developments must have inclusionary units affordable for low to moderate income households. Rental developments must provide inclusionary units for very low to moderate income households. For both rental and homeownership developments, the larger the project, the deeper the affordability requirements. All inclusionary units must be income-restricted in perpetuity. To enhance housing development feasibility

while complying with the inclusionary requirements, the County plans to:

- Modify the inclusionary housing program to expand affordability ranges based on the type and size of projects and to be in compliance with AB 1505.
- Work with Marin County cities and towns to achieve consistency across jurisdictions and to ensure that the policies are aligned with best practices and reflect current market conditions.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ By 2023, modify the Inclusionary Housing program to expand affordability ranges and to comply with State law.</li> <li>▪ In 2023, coordinate with other County jurisdictions to align inclusionary housing requirements for consistency.</li> </ul>
Primary Responsible Departments	Housing, Planning
Funding Sources	General Fund
Relevant Housing Policies	1.1, 1.4, and 2.4

**Program 25: Incentives for Affordable Housing**

The County will continue to facilitate the development of affordable housing, especially for lower income households (including extremely low income) and those with special housing needs (including persons with disabilities/developmental disabilities, older adults, farmworkers, and people experiencing homelessness).

Incentives available for affordable housing projects include:

- County density bonus of 10 percent (above State density bonus)
- Potential fee waivers
- Priority processing
- Technical assistance
- Financial participation by the County, subject to funding availability
- Support and assistance in project developer’s applications for other local, State, and federal funds

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Continue to offer incentives to facilitate affordable housing.</li> <li>▪ Annually conduct outreach to affordable housing</li> </ul>
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	<p>developers to evaluate the effectiveness of incentives and make appropriate adjustments.</p> <ul style="list-style-type: none"> <li>Facilitate the development of 200 affordable units over eight years.</li> </ul>
Primary Responsible Departments	Housing, Planning
Funding Sources	General Fund; Housing Trust Fund
Relevant Housing Policies	2.4

### Program 26: Below Market Rate (BMR) Homeownership Program

Funded with Successor Agency funds, the BMR Homeownership program offers low and moderate income, first-time homebuyers the opportunity to purchase specified condominium units in Marin County at less than market value. As the owner of a BMR unit sells, the unit is resold to another income-eligible homeowner.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>Maintain 90 BMR units for continued affordable housing for lower and moderate income households.</li> </ul>
Primary Responsible Departments	Marin Housing Authority
Funding Sources	Successor Agency to the Marin County Redevelopment Agency
Relevant Housing Policies	2.1, 2.4, and 3.4

### Program 27: Community Land Trust

Currently, the County has two Community Land Trusts in the unincorporated areas - Community Land Trust Association of West Marin (CLAM) and Bolinas Community Land Trust (BCLT). CLAM provides education, assistance with project management, and screening and referral services to prospective landlords who agree to rent their units at rates affordable to low and moderate income households. The County provides financial, administrative, and technical support to CLAM. The County may

facilitate the establishment of additional Community Land Trusts in different CPAs.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Continue supporting the operation of CLTs.</li> <li>▪ Subject to funding availability, establish additional CLTs in other CPAs.</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	3.4, 4.1, and 4.2

**Program 28: Affordable Housing Funding Sources**

The County’s Affordable Housing Fund is funded with a variety of sources:

- Affordable Housing Impact Fee
- Inclusionary Housing In-Lieu fee
- Rental Housing Impact Fee
- Jobs/Housing Linkage Fee
- CDBG
- HOME
- Permanent Local Housing Allocation
- General Fund

In addition, the County continues to pursue additional funding from State and Federal housing programs. Other potential sources may include vacant home tax (see Program 19).

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Annually pursue additional funding from State and Federal housing programs.</li> <li>▪ Facilitate the development of 200 affordable housing units.</li> </ul>
Primary Responsible Departments	Housing

Funding Sources	
Relevant Housing Policies	3.4

**Program 29: Community Plans**

Existing community plans contain goals, policies, and programs that are inconsistent with the Countywide Plan. Where such conflicts exist, the Countywide Plan prevails. The County will pursue neighborhood improvement strategies through community plans - specifically for Marin City, which already has a high concentration of affordable housing.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>In 2023, initiate Marin City Community Plan, with the goal of adopting the plan by 2025.</li> </ul>
Primary Responsible Departments	Housing; Planning
Funding Sources	General Fund
Relevant Housing Policies	1.1 and 4.3

**Affirmatively Furthering Fair Housing**

**Program 30: Fair Housing Outreach and Enforcement**

The County refers fair housing complaints to Fair Housing Advocates of Northern California (FHANC) for legal services. The County will assist in fair housing outreach and education, and reasonable accommodations through funding FHANC.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>Assist an average of 50 residents annually with tenant/landlord dispute resolution, and fair housing inquiries and investigations.</li> <li>Annually update, or more frequently as needed, the County’s Landlord and Tenant Resources webpage.</li> <li>Beginning in 2023, increase fair housing outreach to Homeowners Associations, realtors, property managers, and brokers, as well as individual property owners (such</li> </ul>
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	as single-unit homes, duplex/triplex units, and ADUs used as rentals). Specifically, promote the State’s Source of Income Protection bills (SB 329 and SB 222) that prohibit discrimination based on the use of public assistance for housing payments (such as Housing Choice Vouchers).
Primary Responsible Departments	Fair Housing Advocates of Norther California; Housing Authority; Housing
Funding Sources	CDBG; General Fund
Relevant Housing Policies	4.1, 4.2, and 4.3

**Program 31: Tenant Protection Strategies**

Throughout the region, tenants are facing rising rents and increasing risk of eviction due to the economic impact of COVID, as well as displacement from the economic pressure of new development. The County will explore a variety of strategies that offer tenant protection. These may include:

- **Rent stabilization:** Currently, the State imposes rent caps on some residential rental properties (AB 1482) through 2030. However, AB 1482 exempts single-unit homes and condominiums for rent and multi-unit housing units built within the previous 15 years. A strategy for rent stabilization is to adopt a permanent policy and/or expansion to units not covered by AB 1482. However, compliance with the 1995 Multi-unit Housing Act (Costa Hawkins) is critical.
- **Just cause for eviction:** AB 1482 also establishes a specific set of reasons that a tenancy can be terminated. These include: 1) default in rent payment; 2) breach of lease term; 3) nuisance activity or waste; 4) criminal activity; 5) subletting without permission; 6) refusal to provide access; 7) failure to vacate; 8) refusal to sign lease; and 9) unlawful purpose.

The County passed an ordinance to require a just cause for eviction that applies to properties of three or more dwelling units in January 2019, before the adoption of AB 1482. The County may consider expanding “just cause” to all units, and potentially include relocation assistance.

- **Local relocation assistance:** The County can adopt a local relocation assistance provision that provides greater relocation assistance to special needs groups (e.g., seniors, disabled, female-headed households) and reasonable accommodation for persons with disabilities.

- **Tenant commission:** Typically, most land use policies and planning decisions are made from the perspective of property owners. Tenants lack a voice in the planning process. A tenant commission or advisory committee may be an avenue through which they can bring policy discussions that highlight tenant interests to the County. While the proportion of renter-occupied units in the County is growing, there is currently no body within the County where their unique concerns can be raised.
- **Right to Purchase:** When tenants are being evicted due to condominium conversion or redevelopment, offer first right to purchase to displaced tenants to purchase the units.
- **Right to Return:** When tenants are being evicted due to rehabilitation/renovation of the property, offer first right to displaced tenants to return to the improved property.
- **Tenant Bill of Rights:** Adopt a tenant’s bill of rights that considers extending protections for subletters and family members, and addresses severe habitability issues and market pressures. This provision would also provide anti-retaliation protection for tenants that assert their rights.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>▪ Continue to implement the County’s Landlord Registry requirement.</li> <li>▪ In 2023, begin community outreach to discuss various tenant protection strategies.</li> <li>▪ In 2024, adopt appropriate tenant protection strategies.</li> </ul>
Primary Responsible Departments	Housing
Funding Sources	General Fund
Relevant Housing Policies	4.1

**Program 32: Comprehensive Review of Zoning and Planning Policies**

The County’s Development Code and planning policies have been incrementally developed over time and may have inherited language rooted in segregation. The County will conduct a comprehensive review of its zoning and planning policies to remove discriminatory language or policies that may directly or indirectly perpetuate segregation. This includes reviewing the use of the terms “single-unit” residential use,

“protecting the character of the neighborhood,” and findings of conditional approval in different regulatory documents.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>In 2025, conduct a comprehensive review of zoning and planning policies to remove discriminatory language and policies.</li> </ul>
Primary Responsible Departments	Housing, Planning
Funding Sources	General Fund
Relevant Housing Policies	1.1 and 4.3

**Program 33: Community Engagement**

Community Development Agency (CDA) outreach working group work with local communities to obtain input on housing and community development issues, especially to highlight areas that have historically been underserved or underrepresented in these conversations.

Specific Actions and Timeline	<ul style="list-style-type: none"> <li>By December 2023, develop a work plan and present to the BOS to identify new geographic areas/populations for outreach and establish a protocol for conducting outreach, with coordinated efforts with County CDA.</li> </ul>
Primary Responsible Departments	Housing, Planning
Funding Sources	General Fund
Relevant Housing Policies	3.1, 3.2, 4.2, and 4.3



## What Are the Desired Outcomes?

### GOAL EHS- I: Equitable Community Safety Planning

Equitable Community Safety Planning. Create equitable processes for executing climate resilience and community safety policies, where justice is central to policy design and implementation.

#### Policies

**EHS-1.1**     Safety Planning for Everyone. Prioritize involvement of the vulnerable communities identified in the Marin County Climate Change Vulnerability Assessment in community safety planning. Reduce the exposure to, increase preparedness for, and reduce recovery times from natural and human-caused safety risks for vulnerable communities as well as all populations and communities in Marin County.

**EHS-1.2**     Community-Led Safety Programs. Put community organizations and civic leaders at the forefront of the community safety planning process.

#### *Why is this important?*

**Environment:** Equity and environmental protection go hand-in-hand. Making environments healthier for people often involves preserving and restoring native habitat and ecosystem elements.

**Economy:** Community-led safety planning can reach a greater number of residents and help small business owners prepare for and recover quickly after disasters, creating resilient local economies.

**Equity:** Structuring community safety programs around a social equity and environmental justice framework ensures the most vulnerable communities in Marin are leaders in their own disaster planning and recovery.

#### *How will results be achieved?*

### Implementing Programs

**EHS-1.1.a**     Develop a Vulnerable Communities Database. Using the County Climate Change Vulnerability Assessment as a starting point, develop a database of the County’s vulnerable communities including their economic, gender, age, linguistic, ethnic, and racial characteristics; geographic locations; hazard impact; and adaptive capacity. The vulnerable communities database should include a mapping component. Reference the database when planning and developing resiliency outreach materials, financial assistance programs, and long-range planning initiatives. Update the database periodically and share with emergency response providers.

**EHS-1.1.b**     Develop an Outreach Program for Vulnerable Populations. Develop a climate change preparedness outreach program focused on vulnerable populations that provides information on staying healthy and safe before, during, and after hazardous events. Programming can include educational events, workshops for

school aged children, and providing emergency kits to community members. To ensure success, the County should do the following: (1) account for all of the different factors that can deter people from being included in planning processes, and use approaches appropriate for each community; (2) partner with local community organizations to reach all populations and reduce health inequities; (3) provide materials in multiple languages; (4) provide staff fluent or proficient in the communities' predominant language(s); (5) address lack of access to technology that may prevent or delay emergency notifications; (6) make community engagement and participation easy and available to all residents through multiple media, such as social media, virtual meeting platforms, and in-person events; and (7) make public notices and other important document available in print at local libraries, community centers, or other gathering places. (See also EH-2.1.b)

**EHS-1.1.c** **Prevent Displacement of Vulnerable People.** Work with community-based organizations to develop and support temporary housing solutions for lower-income immigrants, older adults, and other vulnerable groups during and after an emergency. Provide priority access to housing developed for community residents and those who have been displaced following disasters.

**EHS-1.1.d** **Provide Financial Assistance.** Establish and fund an ongoing disaster preparedness and recovery financial aid program to ease the financial burden of response and recovery on vulnerable communities. Explore regional, state, and federal funding mechanisms to support the financial aid program.

**EHS-1.1.e** **Assist with Physical Evacuation.** Improve notification and tracking systems to ensure all known individuals who have difficulty physically evacuating are accounted for during and following disasters.

**EHS-1.2.a** **Partner with Local Leaders.** Identify, initiate, and formalize partnerships with community organizations and leaders in vulnerable communities to ensure that local residents can make significant contributions to planning processes. Build relationships with community-based organizations to improve trust and communication between local agencies and vulnerable communities, which may experience distrust of government authorities.

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>1</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

**Figure 2-20: Goal EHS-1. Equitable Community Safety Planning, Program Implementation Table**

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-1.1.a Develop a Vulnerable Communities Database	CDA	Existing Budget	High	Short-term
EHS-1.1.b Develop an Outreach Program for Vulnerable Populations.	CDA, OES, Fire Agencies	Existing Budget	High	Ongoing
EHS-1.1.c Prevent Displacement of Vulnerable People	County partnerships	Existing Budget & Grants	High	Ongoing
EHS-1.1.d Provide Financial Assistance	County Partnerships	Grants	Medium	Ongoing
EHS-1.1.e Assist with Physical Evacuation	OES, Fire Agencies	Existing Budget & Grants	Medium	Ongoing
EHS-1.2.a Partner with Local Leaders	CDA, OES, Fire Agencies	Existing Budget	High	Ongoing

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<sup>1</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).

## ~~Goal EHS-1: Hazard Awareness~~

### What Are the Desired Outcomes?

## **GOAL EHS-2: Disaster Preparedness, Response, and Recovery**

[Note to Reader: This Goal incorporates Goal 1: Hazard Awareness from the existing CWP Section 2.6 Environmental Hazards. New hazard awareness policies and language are shown in underline while the existing Hazard Awareness policies in the CWP moved here are not.]

Disaster Preparedness, Response, and Recovery. Support continuing public awareness of hazards, including avoidance, disaster preparedness, and emergency response procedures. Ensure readiness in and after emergency situations and create an effective evacuation route network.

### **Policies**

- EHS 2.1**      Enhance Public Awareness. Make hazard studies, data, maps, services, and related information more accessible to residents and include more robust and targeted outreach in vulnerable communities.
- EHS 2.2**      Improve Information Base. Support scientific studies and other technical planning efforts that increase and refine the body of knowledge regarding hazardous conditions in Marin County.
- EHS 2.3**      Disaster Readiness. Maintain a level of preparedness to respond to emergency situations that will save lives, protect property, and facilitate recovery with minimal disruption.
- EHS 2.4**      Effective Emergency Access and Evacuation. Ensure that first responders have adequate emergency access routes and that County residents, businesses, workers, and visitors can effectively evacuate during or after a disaster.
- EHS 2.5**      Adequate Services. Improve existing and increase future capacity of critical services and infrastructure.

### *Why is this important?*

**Environment:** Expanded knowledge about hazards can protect the local environment ~~and can improve~~ improving the way in which environmental resources are managed as climate change stressors exacerbate hazards and damage environmental resources and require a greater allocation of resources for conservation activities. Considering environmental ramifications in the disaster preparedness and evacuation planning process contributes to ecologically sound practices that are compliant with relevant environmental regulations.

**Economy:** Effective disaster preparedness and recovery planning helps institutions, communities, and local economies “bounce back” from disaster events. Clearly understanding hazard risks, projected impacts, and potential mitigating steps is necessary for community members to adapt their businesses, investments, and policy decisions.

**Equity:** Hazard events have disproportionate effects on vulnerable individuals and communities. Community members, especially those within a vulnerable population group, may be unaware of the climate-related effects that may be harmful to their community, or how to stay safe during hazardous events. Community and civic leaders should have leading roles in disaster preparedness and recovery planning and programs to ensure vulnerable populations are not left behind during or after disasters.

*How will results be achieved?*

## **Implementing Programs**

- EHS-2.1.a** **Distribute Maps.** Prepare Update regularly and make available to the public maps depicting evacuation routes and areas prone to environmental hazards.
- EHS-2.1.b** **Develop an Inclusive Public Outreach and Engagement Strategy.** Collaborate with local, regional, state, and federal partners to develop a community-wide outreach program to educate a diverse community on how to prepare and recover from climate change effects Sponsor and support education programs pertaining to emergency/disaster preparedness and response protocols and procedures. Work to fill gaps in local information to ensure information is useful and able to be implemented. Materials should be developed in multiple languages and in several formats to reach all residents. Distribute information about emergency preparedness to residents, community groups, schools, religious institutions, transient occupancy establishments, and business associations. Include instruction on ZoneHaven and evacuation zones in educational materials. (See also EH-1.1b)
- EHS-2.1.c** **Promote Awareness of Risks to Historic Resources.** Educate community members about the climate risks to historic, cultural, and tribal cultural resources, and the need to safeguard these cultural resources in partnership with tribal nations and community-based organizations.
- EHS-2.2.a** **Improve Hazard Information.** Continue to improve available hazard information and knowledge base. Track changing hazard risk and impacts and identify gaps in hazard information and mapping. Support scientific study of hazard potential in Marin, including by providing investigators with access to public land and facilitating access to other areas.
- EHS-2.2.b** **Document Areas Experiencing Repeated Damage from Hazards** For all types of environmental and climate change hazards, consistently map and track areas experiencing repeated damage from hazard events as a basis of informing the public and for future planning efforts
- EHS 2.3.a** **Update the Emergency Recovery Plan.** Update the County’s emergency recovery plan, which addresses the steps that will be taken when an emergency situation occurs and during the immediate aftermath. Incorporate a framework for short-term immediate assistance for residents who have lost housing and access to resources and long-term housing re-construction plans, re-construction of facilities

and infrastructure, including those essential for critical medical services and utility services, and aid-based reimbursement for eligible disaster-related costs. Identify federal, state, tribal, regional, and private sector programs and assistance to supplement local disaster response efforts. Integrate the MCM LHMP mitigation actions and EOP, where relevant, into the Emergency Recovery Plan.

**EHS-2.3.b** **Plan for Recovery Permitting.** Plan for a recovery permit center that will be established following a large-scale disaster. The plan or framework will identify which department and/or staff will lead the recovery permitting process, what types of permit applications would be streamlined, and anticipated staffing levels (including contracted services), funds, and time frames for review. Identify zones, overlays, and specific or community plan areas where rebuilding could be subject to restrictive or subjective requirements and identify preliminary strategies for evaluating applications.

**EHS-2.3.c** **Support Post-Disaster Housing Affordability.** Develop a community planning process to support rebuilding of affordable housing after a disaster, adopt policies to support the replacement of affordable housing units that have been damaged or demolished, and prioritize the deployment of interim housing in vulnerable communities. Work to develop several funding sources to support implementation of the process.

**EHS-2.3.d** **Support Community-Led Response and Neighborhood Preparedness.** Improve strategies to identify and include civic leaders and the public in the disaster recovery decision-making process and implementation of post-disaster recovery programs. Identify a county designee to collaborate with the community and assist in developing the community preparedness and response strategies. Support community and neighborhood efforts in developing localized emergency response and preparedness plans by providing guidance and hazard data.

**EHS-2.3.e** **Provide and Support Emergency Preparedness Training.** Support the activities of Local Disaster Councils and fire departments in offering community emergency response training courses. Provide and support on-going disaster preparedness and hazard awareness training to all County employees, other responding agencies, and Local Disaster Councils. Ensure training occurs regularly, such as every three years, and includes emergency response approaches to vulnerable populations that cannot respond to a disaster without assistance.

**EHS-2.3.f** **Encourage Road Improvements.** Reduce regulatory impediments to road construction, widening, and other improvements by amending relevant sections of Marin County Code Titles 22, 23, and 24 to eliminate discretionary permit requirements and replace them with ministerial review to ensure that both public and private roads comply with codified engineering standards.

**EHS-2.4.a** **Maintain and Improve Disaster and Emergency Response Notification System.** Continue to maintain and refine the existing Alert Marin system for disaster and

emergency response notifications. Work to identify and close gaps in the ability of all residents to receive disaster and emergency response notifications and information, such as those without telecommunication devices or internet access.

**EHS-2.4.b** **Adopt Proactive Preparedness.** Update disaster preparedness and response plans, regulations, and programs periodically to respond to new hazard data and changing hazard conditions.

**EHS-2.4.c** **Identify and Improve Deficient Evacuation Routes.** Implement findings of the Marin Wildfire Protection Authority Evacuation Ingress-Egress Risk Assessment. Use the visual risk assessment and risk factors to identify and prioritize existing deficient evacuation routes. Improve evacuation routes based on the prioritization ranking, but also in consideration of improvements required for a transportation network which is resilient to flooding and inundation from sea level rise.

**EHS-2.4.d** **Create New Evacuation Routes.** Identify and construct additional local evacuation routes in areas of high hazard concern or limited mobility.

**EHS-2.4.e** **Ensure Access to New Development.** Require new development to include adequate roadway ingress/egress for emergency access and evacuation routes.

**EHS-2.5.a** **Assess Critical Services Capacity.** Conduct an assessment of existing critical services for adequate capacity considering the projected scale of new development and climate change-induced increases in the severity of hazards. Use the service capacity assessment to create or update minimum standards for existing and future development to meet current and future anticipated demands for infrastructure (e.g., water, sewer, roads), privately provided services (e.g., telecommunications, gas, electricity), and County provided services (e.g., police, fire). Purchase permanent and/or portable generators for critical facilities, infrastructure, and services that lack adequate backup power.

**EHS-2.5.b** **Explore Creation of New Evacuation Centers.** Assess the potential for existing community facilities, including but not limited to libraries, churches/places of worship, schools, community and recreation centers, nonprofits, and local businesses, to serve as evacuation centers. Evacuation centers should be outfitted to provide material assistance, phone charging during a power outage, air conditioning during a heatwave, organize welfare checks on vulnerable neighbors, or deliver other services. Consider leveraging potential community resiliency hubs to provide evacuation center services and equipment when standalone evacuation centers are infeasible.

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>2</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

**Figure 2-21: Goal EHS-2. Disaster Preparedness, Response, & Recovery Program Implementation Table**

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-2.1.a Distribute Maps	Fire Agencies, IST, OES, CDA	Existing Budget	Medium	Ongoing
EHS-2.1.b Develop an Inclusive Public Outreach and Engagement Strategy	CDA, OES, Fire Agencies	Existing Budget	High	Ongoing
EHS-2.1.c Promote Awareness of Risks to Historic Resources	CDA	Existing	Low	Med-Term
EHS-2.2.a Improve Hazard Information	CDA	Existing	Med	Ongoing
EHS-2.2.b Document Areas Experiencing Repeated Damage from Hazards	CDA, DPW, OES	Will require additional funding	Med	Ongoing
EHS-2.3.a Update the Emergency Recovery Plan	OES	Will require additional funding	High	Short-term
EHS-2.3.b Plan for Recovery Permitting	CDA, DPW	Existing and may require additional funding	Med	Med-term
EHS-2.3.c Support Post-Disaster Housing Affordability	CDA, OES, HHS	Will require additional funding	High	Med-Term
EHS-2.3.d Support Community-Led Response and Neighborhood Preparedness	Fire Agencies, OES	Existing	High	Ongoing
EHS 2.3.e Provide and Support Emergency Preparedness Training	OES	Existing	High	Ongoing
EHS-2.3.f Encourage Road Improvements	CDA, DPW	Existing	High	Short-Term

<sup>2</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).





<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
EHS-2.4.a Maintain and Improve Disaster and Emergency Response Notifications System(s)	OES, Utilities	Existing	High	Med-Term
EHS-2.4.b Identify and Improve Deficient Evacuation Routes	Fire Agencies, DPW	Requires additional funding	High	Long-Term
EHS-2.4.c Create New Evacuation Routes	Fire Agencies, DPW	Requires additional funding	High	Long-Term
EHS-2.4.d Ensure Access to New Development	CDA, DPW	Existing	High	Ongoing
EHS-2.5.a Assess Critical Services Capacity	OES, Fire Agencies	Existing and may require additional funding	Med	Long-Term
EHS-2.5.b Explore Creation of New Evacuation Centers	OES, Fire Agencies, DPW	Existing	Med	Med-Term

## What Are the Desired Outcomes?

### Goal EHS-23: Safety from Geologic and Seismic Hazards

**[Note to Reader: This section largely remains the same from the current CWP with minor modifications. The Implementing Programs have been reorganized to correspond better to the organization of the Policies.]**

**Safety from Seismic and Geologic Hazards.** ~~Protect people and property from risks associated with seismic activity and geologic conditions.~~ Minimize the loss of life, injury, and property damage due to seismic and related geological hazards.

#### Policies

**EH-93.1** ~~Avoid Geologic Hazards Areas.~~ Require development to avoid or minimize potential geologic hazards from earthquakes and unstable ground conditions.

**EH-93.2** **Comply with the Alquist-Priolo Act.** Continue to implement and enforce the Alquist-Priolo Earthquake Fault Zoning Act.

**EH-93.3** **Ensure Seismic Safety of New and Existing Structures.** Design and construct all new buildings and substantial remodeling projects to be earthquake resistant. The minimum level of design necessary would be in accordance with seismic provisions and criteria contained in the most recent version of the State and County Codes. Construction would require effective oversight and enforcement to ensure adherence to the earthquake design criteria.

**EH-93.4** **Protect Coastal Areas from Tsunamis.** Refer to tsunami wave run-up and inundation maps when reviewing proposed development along coastal areas of Marin County.

#### *Why is this important?*

~~Lives can be saved and property protected when buildings are located safely.~~

**Environment:** Well-planned development protects the environment and minimizes impacts to natural systems when structures or facilities designed to protect against the anticipated hazard.

**Economy:** Careful planning in the placement and construction of ~~buildings~~ development can help ensure safety during a hazardous event and provide for a faster recovery. This lessens the severity and duration of the economic impact caused by a seismic event and/or unpredictable geologic conditions.

**Equity:** The future health and resiliency ~~prosperity~~ of the community depend on our ability to cope with a major hazardous event. Ensuring that all community members reside in buildings resistant to seismic and geologic hazards is of the utmost importance. ~~Earthquakes on the San Andreas and Hayward Rodgers Creek fault systems could significantly affect Marin.~~

*How will results be achieved?*

## **Implementing Programs**

**EHS-23.1.a** **Map Geologic Hazard Areas.** Update Geologic Hazard Area maps as updated information becomes available. These maps should be used to determine the need for geologic and geotechnical reports for proposed development or redevelopment.

**EHS-23.1.b** **Require Geotechnical Reports.** Continue to require any applicant for land division, master plan, development approval, grading, or new construction in a geologic hazard area to submit a geotechnical report prepared by a State-certified Engineering Geologist or a Registered Geotechnical Engineer that: evaluates soil, slope, and other geologic hazard conditions; commits to appropriate and comprehensive mitigation measures sufficient to reduce risks to acceptable levels, including post-construction site monitoring, if applicable; addresses the impact of the project on adjacent lands, and potential impacts of offsite conditions; and meets the requirements of other agency regulations with jurisdiction in the hazard area, such as BCD C requirements for the safety of fills consistent with the Bay Plan.

**EHS-23.2.a** **Prohibit Structures in Active Fault Traces.** Prohibit placement of specified types of structures intended for human occupancy within 50 feet of an active fault trace in compliance with the Alquist-Priolo Earthquake Fault Zoning Act.

**EHS-23.2.b** **Limit Building Sites in Alquist-Priolo Zones.** Prohibit new building sites in any Alquist-Priolo Earthquake Fault Zone, unless a geotechnical report prepared by a professional geologist establishes that the development will comply with all applicable State and County earthquake standards and regulations.

**EHS-23.3.a** **Avoid Known Landslides Areas.** Continue to prohibit development in landslide areas and on landslide-prone deposits on steep slopes, except where the required geotechnical report indicates that appropriate mitigation measures can stabilize the site for construction.

**EH-23.3.b** **Protect Development from Increased Geologic Hazards.** Plan for and protect development from increased risk of landslide, debris flows, post-fire debris flows, and subsidence resulting from climate change impacts by implementing Stability Report requirements and subsidence evaluation guidelines.

**EHS-1e3.3.c** **Improve Soils Information.** Compile and make available drilling log data from geotechnical reports that helps define the hazard potential due to specific soil conditions, such as areas with expansive soils, artificial fill, or bay mud. **Moved from Hazard Awareness, is an existing policy in CWP!**

**EHS-23.3.d** **Explore New Guidelines for Rising Groundwater Levels.** Based on sea level rise mapping, explore creating new guidelines requiring geotechnical evaluations for new development within areas subject to sea level rise, to assess and anticipate rising groundwater levels.

**EHS-23.3.e Identify Compressible Soil Potential.** Require that geotechnical reports for projects on land underlain by compressible materials (such as fill, bay mud, and marsh or slough areas) delineate locations where settlement will be greatest and subsidence may occur, and recommend site preparation and construction techniques necessary to reduce risk and public liability to an acceptable level.

**EHS-23.3.f Require Construction Observation and Certification.** Require any work or construction undertaken to correct slope instability or mitigate other geologic hazard conditions to be supervised and certified by a geotechnical engineer and/or an engineering geologist.

**EHS-23.3.g Reliability of Lifelines and Access (Evacuation) Routes.** In cooperation with utility system providers, emergency management agencies, and others, assist in the development of strategies to reduce adverse effects of geologic hazards, especially fault surface rupture and landslides to critical public lifelines, and access (i.e., evacuation) routes in an emergency.

**EHS-23.3.h Retrofit County Buildings and Critical Facilities.** Identify and remedy any County-owned structures and critical facilities in need of seismic retrofit or other geotechnical/structural improvement, including eliminating any potentially hazardous features, and/or relocating services if necessary.

**EHS-23.3.i Post-Earthquake Damage Assessment.** Undertake immediate damage assessment of essential service buildings and facilities and then other buildings as part of the emergency response planning in response to a damaging earthquake.

**EHS-23.4.a Address Tsunami Potential.** Review tsunami wave run-up and inundation maps, ~~when available,~~ along with other applicable information to be considered in coastal planning and development.

**EHS-23.4.b Make Keep Marin County Tsunami-Ready. ~~Be~~ Continue to maintain** Marin's status as a National Weather Service TsunamiReady community in order to promote public awareness and community preparedness and facilitate quick recovery in the event of a tsunami.

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>3</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

**Figure 2-22: Goal EHS-3. Safety from Geologic and Seismic Hazards, Program Implementation Table**

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-3.1.a Map Geologic Hazard Areas	CDA	Existing	High	Ongoing
EHS-3.1.b Require Geotechnical Reports	CDA	Existing	High	Ongoing
EHS-3.2.a Prohibit Structures in Active Fault Traces	CDA	Existing	High	Ongoing
EHS-3.2.b Limit Building Sites in Alquist-Priolo Zones	CDA	Existing	High	Ongoing
EHS-3.3.a Avoid Known Landslides Areas	CDA	Existing	High	Ongoing
EHS-3.3.b Protect Development from Increased Geologic Hazards	CDA	Existing	Med	Long-Term
EHS-3.3.c Improve Soils Information	CDA, USGS <sup>4</sup>	Existing & may require additional grants and revenue	Med	Med-Term
EHS-3.3.d Explore New Guidelines for Rising Groundwater Levels	CDA, USGS	Existing & may require additional grants and revenue	Med	Med-Term
EHS-3.3.e Identify Compressible Soil Potential	CDA / USGS	Existing	Med	Long-Term
EHS-3.3.f Require Construction Observation and Certification	CDA	Existing	High	Ongoing
EHS-3.3.g Reliability of Lifelines and Access (Evacuation) Routes.	Fire Agencies & OES	Will require additional funding	High	Ongoing
EHS-3.3.h Retrofit County Buildings and Critical Facilities.	DPW	Will require additional funding	Med	Ongoing
EHS-3.3.i Post-Earthquake Damage Assessment	OES	Will require additional funding	Low	Long-Term

<sup>3</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).

<sup>4</sup> United States Geologic Survey (USGS)

EHS-3.4.a Address Tsunami Potential	CDA / CNRA <sup>5</sup> / USGS	Existing	Med	Long-Term
EHS-3.4.b Keep Marin County TsunamiReady	OES	Existing	Med	Ongoing

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<sup>5</sup> California Natural Resources Agency (CNRA)



## What Are the Desired Outcomes?

### Goal EHS-34 Safety from Flooding. and Inundation

**Safety from Flooding.** Protect people, and property from risks associated with flooding. (Also see the Public Facilities and Water Resources sections.) Minimize the loss of life, injury, and property damage due to flooding hazards.

#### Policies

**EHS-34.1 Follow a Regulatory Approach.** Utilize regulations instead of flood ~~control~~ infrastructure projects whenever possible to minimize losses in areas where flooding is inevitable.

**EHS-34.2 Retain Natural Conditions.** Ensure that flow capacity is maintained in stream channels and flood plains, and achieve flood ~~control~~ management using flood plain restoration and biotechnical techniques instead of storm drains, culverts, riprap, and other forms of structural stabilization.

**EHS-34.3 Monitor Environmental Change.** Consider cumulative impacts to hydrological conditions, including alterations in drainage patterns and the potential for a rise in sea level, when processing development applications in watersheds with flooding or inundation potential.

**EHS-34.4 Consider Flooding from Dam Failure ~~Inundation~~.** Consider flood inundation resulting from upstream dam failures when assessing flood hazards for environmental review and implementing associated programs within the County.

**EHS-4.5 Encourage Modifications or Relocation of Existing Development.** Support and encourage private property owners to either modify, elevate, reinforce, or relocate development in flood-prone areas to account for increased flood extents and depths.

**EHS-4.6 Protect Public Facilities.** Minimize potential damage to essential public facilities due to flooding.

#### *Why is this important?*

With increases in sea level due to global warming, flooding is predicted to increase in the future. Locating development in flood-prone areas can expose structures to damage and create risks for inhabitants in the immediate and surrounding areas.

**Environment: ~~Prohibiting~~ Approving adaptive, environmentally sensitive development** in the floodplain helps preserve valuable habitat, vital groundwater recharge capacity, and other natural systems. Using nature-based flood management solutions restores valuable habitat and protects communities at the same time.

**Economy:** Significant flooding with associated economic impacts has occurred in portions of Corte Madera, Larkspur, Greenbrae, Ross, San Anselmo, San Rafael, and Novato over the last 50 years.

Flooding has also occurred in Mill Valley, Fairfax, Stinson Beach, Inverness, and Muir Beach. Extensive property damage could be expected in inundated valleys, especially those downstream from major dam/reservoir complexes. Protecting property from future flooding risks contributes to economic stability.

**Equity:** Limiting development in floodplain and coastal areas contributes to the protection of residents and their property. Ensuring vulnerable communities receive financial assistance to strengthen homes and properties against flood damage is important in an equitable approach to flood risk reduction.

*How will results be achieved?*

## **Implementing Programs**

**EHS-34.1.a** **Regulate Development in Flood and Inundation Areas.** Continue to require all improvements in Bayfront, Floodplain, Tidelands, and Coastal High Hazard Zones to be designed to be more resistant to damage from flooding; tsunamis, seiches, and related water-borne debris, and to be located so that buildings and features such as docks, decking, floats, and vessels would be more resistant to damage.

**EHS-34.1.b** **Update Maps.** ~~Annually~~ Periodically review those areas covered by the Countywide Plan that are subject to flooding, identified by floodplain mapping prepared by the Federal Emergency Management Agency (FEMA) or Department of Water Resources, and update Figure 2-13 and other General Plan maps accordingly. Map the combined effects of the FEMA 100-year storm event with sea level rise projections. Periodically review and overlay County zoning maps to show flood, tsunami, and inundation hazard areas along the San Francisco Bay, San Pablo Bay, Tomales Bay, and the Pacific Ocean, the Bayfront Conservation Zone, and the Coastal Zone.

**EHS-34.1.c** **Revise Regulations.** Consider expanding the F-1 and F-2 Floodway Districts to include areas of the unincorporated county that lie within primary and secondary floodways, and/or establishing an ordinance that will ensure that land use activities in flood hazard areas will be allowed only in compliance with federal standards.

**EHS-34.1.d** ~~Maintain Flood Controls.~~ **Maintain Flood Management Measures.** Continue to implement adopted flood ~~control~~ management programs within designated flood zones, including limitations on land use activities in flood hazard areas and through the funding for repair and maintenance of necessary flood ~~control~~ management structures in partnership with local flood zones.

**EHS-34.1.e** ~~Restrict Design Development in Flood Prone Areas to Avoid Minimize~~ **Restrict Design Development in Flood Prone Areas to Avoid Minimize Inundation.** Continue to regulate development in Special Flood Hazard areas by applying the County's Floodplain Management Ordinance, Federal Emergency Management Agency regulations, and environmental review pursuant to the California Environmental Quality Act (CEQA). Rather than explicitly restrict development in tsunami and flood hazard areas, unless a site is repeatedly and



significantly affected by flooding, require through amendments to County codes, new development to be designed, elevated, sited, and/or strengthened against flood inundation. Flood adaptation measures should, at a minimum, be consistent with FEMA regulations to reduce flood risk to residential buildings. Where possible, use nature-based flood adaptation measures, such as widening natural flood plains, creating constructed dunes, protecting and expanding wetlands, and creating new and expanding existing urban green spaces.

**EHS-34.1.f**

**Continue Compliance under the National Flood Insurance Program (NFIP).**

Continue to maintain good standing and compliance under the NFIP through implementation of floodplain management programs that, at a minimum, meet the NFIP requirements:

- Enforce the flood damage prevention ordinance.
- Participate in floodplain identification and mapping updates.
- Provide public assistance/information on floodplain requirements and impacts.

**EHS-34.1.g**

**Facilitate Community Coordination Around Shoreline Adaptation.** Develop a framework for incentivizing landowners to work together on shoreline protection projects and facilitating public communication and coordination around shoreline protection in a process that follows Safety Element policies and programs.

**EHS-34.2.a**

**Retain Ponding Areas.** Maintain publicly controlled flood ponding areas in a natural state for flood ~~control~~ management, and continue to promote compatible uses in ponding areas, such as agriculture, open space, and recreation.

**EHS-34.3.a**

**Require Hydrologic, Hydraulic, and Geomorphic Studies.** Continue to require submission of detailed hydrologic and ~~geologic~~ geomorphic studies for any proposed development that could increase sedimentation of a watercourse or alter natural drainage patterns. Amend the Development Code to include findings to continue to regulate development in flood prone areas to ensure public health and safety and to preserve the hydraulic and geomorphic integrity of the stream system and associated habitat.

**EHS-34.3.b**

**Assess the Cumulative Impacts of Development in Watersheds on Flood Prone Areas.** Consider the effects of upstream development, including impervious surfaces, alteration of drainage patterns, reduction of vegetation, increased sedimentation, and others, on the potential for flooding in low-lying areas. Consider watershed studies to gather detailed information.

**EHS-34.3.c**

**Develop Watershed Management and Monitoring Plans.** ~~Develop watershed-specific, integrated watershed management and monitoring plans that include development guidelines, natural flood mitigation measures, biomechanical technologies, and the enhancement of hydrological and ecological processes.~~ The

guiding principles of the watershed plans shall equally consider habitat and species protection and monitoring as well as the protection of human life and property.

#### **EHS-34.4.a**

**Maintain Update Current Dam Inundation Failure Maps.** Update and make

Maintain up-to-date public inundation maps for dam/reservoir complexes where downstream valleys are inhabited and the risk of loss of life and extensive property damage is significant. Coordinate with water districts to obtain the most current information from their dam safety programs and reports submitted to the State Division of Safety of Dams.

#### **EHS-34.4.b**

**Review and Inspect Small Dams.** Maintain permit authority over and continue to oversee construction of dams too small to be regulated by the State or federal government.

#### **EHS-34.k**

**Anticipate Climate Change Impacts, Including Sea Level Rise.** Recent predictions of sea level rise for the San Francisco Bay region by BCD and USGS based on climate models and hydrodynamic modeling of the San Francisco Bay Estuary Institute indicate 16 inches of rise by mid-century and 55 inches by 2100. Recent guidance from the California Coastal Commission instructs local coastal resilience planners to use sea level rise targets based on the best available science and a minimum of 3.5 feet of SLR by 2050. Cooperate with the California Coastal Commission, U.S. Geological Survey, the San Francisco Bay Conservation and Development Commission, the California Landscape Cooperative's Climate Commons project and other monitoring agencies to track bay and ocean levels and share baseline topographic and resource data obtained by the County in implementing its own projects to enhance hydrodynamic and ecosystem modeling efforts and assessment of regional climate change impacts. Use official estimates for mean sea level rise and topographic data for environmental review. Environmental review for development applications and County infrastructure shall incorporate official mid-century sea level rise estimates, California Coastal Commission mid-century sea level rise projections, and require adaptive strategies for end-of-century sea level rise for any such project with expected life times beyond 2050.

#### **EHS-34.l**

**Limit Seawall Barriers.** Limit repair, replacement or construction of coastal sea walls and erosion barriers consistent with Local Coastal Program requirements, and as demonstrated to be necessary to protect persons and properties from rising sea level.

#### **EHS-34.n**

**Plan for Climate Change Impacts, Including Sea Level Rise.** Consider sea level rise in future countywide and community plan efforts. Apply for membership in the National Flood Insurance Program's (NFIP) Community Rating System (CRS), and as appropriate through revisions to the Marin County Code, obtain reductions in flood insurance rates offered by the NFIP to community residents. Cooperate with FEMA in its efforts to comply with recent congressional mandates to incorporate predictions of sea level rise in its Flood Insurance Studies and FIRMs. For development of watershed management plans and flood control

~~infrastructure consider official mid-century and end-of-century sea level rise estimates in hydraulic/hydrodynamic modeling, as well as climate adaptation strategies, including avoidance/planned retreat, enhance levees, setback levees to accommodate habitat transition zones, buffer zones and beaches, expanded tidal prisms for enhanced natural scouring of channel sediments, raising and flood proofing structure, provision for additional floodwater pumping stations, and inland detention basin to reduce riverine peak discharges. Participate in the Bay Area Climate & Energy Resilience Project and its March 2013 Proposed 12 Month Action Plan, developed by the Bay Area Joint Policy Committee of the Association of Bay Area Governments. Revise the Marin County Hydrology manual to, at a minimum, incorporate use of updated rainfall frequency data from NOAA's Atlas 14 Volume 6, Vers. 2.1 California (rev. 2012).~~

#### **EHS-4.5.a**

**Provide Flood Reduction Information Resources.** Provide private property owners with resources and recommendations for reinforcing development against flooding. Advocate for a hierarchy of flood adaptation measures beginning with the most preferred strategies, as follows: 1. nature-based solutions; 2. measures to accommodate flooding, such as reinforced or raised ground level floors; 3. a mix of soft (i.e., nature-based) and hard engineering strategies; 4. strictly hard engineering strategies (i.e., structural stabilization).

#### **EHS-4.5.b**

**Participate in Incentive-Based Programs.** Continue participation in incentive-based programs such as the Community Rating System, which encourages community floodplain management practices that exceed NFIP minimum requirements, and StormReady, a voluntary NOAA National Weather Service program focusing on community communication and safety skills.

#### **EHS-34.5.c**

**Alert Property Owners.** Notify owners of property in areas with inundation or flooding potential regarding those hazards when they seek development review or other related County services.

#### **EHS-34.6.a**

**Locate Critical Facilities Safely.** ~~Amend the Development Code to prohibit placement of public safety structures within tsunami inundation or flood-prone areas. **Protect and Ensure Continued Operation of Critical Public Facilities.** Locate new essential critical facilities, including hospitals and healthcare facilities, emergency shelters, fire stations, emergency command centers, emergency communications facilities, and utility infrastructure outside tsunami and flood hazard areas. If a critical public facility must be located in a tsunami and flood hazard area, ensure the facility is designed to withstand and remain operational under anticipated future flooding conditions. Where existing critical public facilities are at risk due to flooding, require on- and off-site flood risk adaptation measures to reduce potential losses. Flood risk adaptation measures may include but are not limited to raising electrical and gas systems, installing watertight doors, installing flood shields for windows and entrances, constructing flood barriers or floodwalls,~~

and raising the ground floor of the facility. Consider alternate, less hazard prone locations for lost structures and facilities.

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>6</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

**Figure 2-23: Goal EHS-4. Safety from Flooding, Program Implementation Table**

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-4.1.a Regulate Development in Flood and Inundation Areas	CDA, DPW, OES	Existing budget, Fees	High	Ongoing
EHS-4.1.b Update Maps	CDA, DPW	Existing budget	Med	Med-Term
EHS-4.1.c Revise Regulations	CDA, DPW	Existing & may require additional grants or revenue	Med	Med-Term
EHS-4.1.d Maintain Flood Management Measures	Flood Control Zones	Existing & may require additional grants or revenue	High	Ongoing
EHS-4.1.e Restrict Development in Flood Prone Areas to Minimize Inundation	CDA, DPW	Existing budget	High	Ongoing
EHS-4.1.f Continue Compliance under the National Flood Insurance Program (NFIP)	DPW	Existing budget	High	Ongoing
EHS-4.1.g Facilitate Community Coordination Around Shoreline Adaptation	CDA, DPW	Existing & may require additional grants or revenue	High	Med-Term
EHS-4.2.a Retain Ponding Areas	DPW	Will require	High	Ongoing

<sup>6</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).

<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
		additional grants or revenue		
EHS-4.3.a Require Hydrologic, Hydraulic, and Geomorphic Studies	CDA, DPW	Existing budget	High	Ongoing
EHS-4.3.b Assess the Cumulative Impacts of Development in Watersheds on Flood Prone Areas	CDA, DPW	Will require additional grants or revenue	Med	Long-Term
EHS-4.4.a Maintain Current Dam Failure Maps	CDA, OES	Existing budget	Med	Med-Term
EHS-4.4.b Review and Inspect Small Dams	CDA, DPW	Existing budget	Low	Ongoing
EHS-4.5.a Provide Flood Reduction Information Resources	CDA, DPW	Existing budget	Med	Ongoing
EHS-4.5.b Participate in Incentive-Based Programs	DPW, OES	Existing budget	Med	Ongoing
EHS-4.5.c Alert Property Owners	CDA	Existing budget & may require additional grants or revenue	High	Ongoing
EHS-4.6.a Protect and Ensure Continued Operation of Critical Public Facilities	DPW	Existing budget & may require additional grants or revenue	High	Short-Term



## What Are the Desired Outcomes?

### Goal EHS-5: Safety from Wildfire

~~Safety from Fires~~ Wildfire. Protect people and property from hazards associated with wildland and structure fires.

#### Policies

**EH-5.3-1** ~~Adopt and i~~ Implement a Regional Fire Management Plan with Marin Fire Agencies: the Marin Wildfire Prevention Authority, County Fire, and FireSAFE Marin. Develop a collaborative, proactive approach to manage wildfire losses by identifying hazard risks and enacting effective mitigation strategies.

**EH-5.2** Ensure Adequate Fire Protection. Ensure that adequate fire protection, including adequate evacuation routes, is provided in new development and when modifications are made to existing development.

**EH-5.53** Regulate Land Uses to Protect from Wildland Fires. Use land use regulations, including but not limited to subdivision approvals and denials and permits for remodeling existing structures, as means of protecting people and property from hazards associated with wildland fires.

**EH-5.14** Limit Risks to Structures. Ensure that adequate fire ~~protection~~ protective features are in place in new development and when modifications are made to existing structures.

**EH-5.25** Remove Hazardous Vegetation. Abate the buildup of vegetation around existing structures or on vacant properties that could help fuel fires. (See also Natural Systems and Agriculture Element, BIO-1.4, Support Vegetation and Wildlife Disease Management Programs).

**EH-4.4** ~~Ensure Adequate Emergency Response.~~ Ensure that there is an adequate number of trained and certified emergency medical technicians to address the increase in medical demand.

#### *Why is this important?*

Fire plays a critical role in California's diverse ecology and protecting people and property from fires will be a continuing challenge.

**Environment:** Wildfires and especially those that involve structures produce vast amounts of greenhouse gases, and release toxic chemicals to the atmosphere, soils, and waterways. Record-breaking fires in recent years have altered California's landscape: destroying vegetation, displacing wildlife, destroying thousands of buildings, forcing hundreds of thousands of people to flee their homes, and exposing millions of residents to dangerously unhealthy air. Controlling wildfires will protect the environment from these harmful effects. Using measures such as controlled burning to

~~remove vegetation that has built up because of historic fire suppression efforts improves firefighting effectiveness and can help restore environmental balance in the county.~~

**Economy:** Wildfires have been expanding and are more destructive; reaching further into suburban and urban areas. In Northern California, wildfires have damaged thousands of homes, businesses, and utility infrastructure regionally in the past five years and burned thousands of acres of agricultural and open space lands reducing economic vitality and tax revenue generation of the affected communities and causing loss of tax revenue to the County. Fire costs can soar to millions of dollars a day from suppression costs, destruction of homes, loss of home based businesses, damage to utilities, and impacts on recreation areas. Minimizing flammable vegetation can reduce potential economic impact and help speed recovery.

**Equity:** Safety from wildfire is especially important for vulnerable populations as the ability to cope with the impacts of evacuation and displacement, and subsequent building repairs or reconstruction is disproportionately low. Marin County has numerous structures located within the wildland-urban interface. Homes with wood siding, wood decks, and wood shingled roofs are at extreme risk from a wildland fire. Designing structures to be fire resistant protects all occupants as well as neighboring areas by limiting fuel available to a spreading fire.

*How will results be achieved?*

## **Implementing Programs**

**EHS-5.1.a** Collaborate with Marin Fire Agencies on Implementing the Community Wildfire Protection Plan. Continue to collaborate with Marin Wildfire Prevention Authority and local fire agencies on implementing the Marin Community Wildfire Protection Plan programs and encourage Marin cities and towns to also support its recommendations.

**EHS-4.1 5.1.b** ~~Continue FIRESafe Marin Program~~ **Wildfire Education.** Continue the various education efforts and safety projects sponsored by FIRESafe Marin. Marin Fire Agencies and implemented through each neighborhood. Education and outreach efforts should include all vulnerable populations, be specific to each community, and focus on community led safety programs. Encourage community participation in programs such as Firewise USA that can help neighbors get organized, find direction, and take action to increase preparedness and reduce ignition risk of homes and structures.

**EHS-4.a 5.1.c** **Provide Information About Fire Hazards.** Work with Marin Fire Agencies, FIRESafe Marin, the Marin County Fire Department, and other local, regional, and State agencies to make maps of areas subject to wildland fire hazard publicly available, and to provide public information and provide publicly available and accessible educational programs regarding fire hazards, and techniques for reducing susceptibility to fire damage and identifying areas of low water pressure.

**EHS-5.1.d** **Identify Areas with Insufficient Evacuation Opportunities.** Continue to collaborate with Marin Fire Agencies in the identification and mapping of areas with only one

point of ingress or egress and roads that do not meet current emergency access and evacuation standards and the preparation of a program that prioritizes corrective actions.

**EHS-5.1.e** **Commit Funding for Evacuation Safety.** Commit funding for projects identified by the Marin Fire Agencies, and, in particular, the Marin Wildfire Prevention Authority that enhance evacuation safety, spanning road improvement, signage, and notification systems.

**EHS-5.1.f** **Monitoring State Requirements for Evacuation Routes.** Track development of minimum standards for roads and evacuation routes and seek to adopt the standard. Apply any state standards for evacuation routes to new development.

**EHS-4.a** **5.1.g** **Continue to Use Technology to Promote Fire Safety.** Continue to apply computer technology, such as Geographic Information Systems, vegetation inventory, evacuation planning and air movement modeling programs, to identify, analyze, and plan for potential fire hazards, including mapping and data analysis for conformance with evolving State standards. Notify affected parties of any relevant findings and make the information available to the public.

**EHS-5.2.a** **Assess and Project Future Fire Protection Needs.** Conduct an assessment of current fire protection capabilities and project the future needs for fire protection, considering future changes in housing, vegetation, access, and water supply. Ensure all communities in unincorporated Marin have adequate fire protection, emergency vehicle access, and adequate water supply for peak fire flow requirements.

**EHS-5.2.b** **Consider Development Impacts to Fire Service.** Consider additional impact or mitigation fees, or a benefit assessment, to offset the impact of new development on fire services.

**EHS-5.2.c** **Describe Training Needs for Emergency Services.** Work with the Office of Emergency Services, Marin County Fire Department, Marin County Sheriff, and other organizations to identify and describe goals and standards for emergency service training.

**EHS-5.2.d** **Continue to Improve Street Addressing.** Continue to implement the program to improve and standardize the County street addressing system in order to reduce emergency service response times. Where applicable, coordinate the program with the cities.

**EHS-5.3.a** **Continue to Revise Adopted Standards.** Continue to adopt revisions to the International Fire and Building Codes, as amended by the State of California, and other standards which address fire safety adopted by the State of California. Review, revise, and/or adopt existing or new local codes, ordinances, and Fire Safe Standards to reflect contemporary fire safe practices.

**EHS-4.a** **5.3.b** **Evaluate Regularly Update Development Standards.** Request Fire Department review of County requirements for peak-load water supply and roadways



(especially on hillsides) to determine whether those provisions need modification to meet evolving State standards, such as limiting narrow roads or one-way road use, grade/slope limits, minimum turning radius, and turnaround widths, to ensure adequate fire protection and suppression.

**EHS-5.3.c** **Require Rebuilding After a Disaster to Meet Current Standards.** Develop

requirements for rebuilding after a disaster so redevelopment meets all current state and local building wildfire protection building code requirements relevant to the particular fire hazard severity zone of the project.

**EH-4.b 5.3.d** **Restrict Land Divisions.** Prohibit land divisions in very high and high fire hazard

areas unless the availability of adequate and reliable water for fire suppression is ~~demonstrated and guaranteed~~ provided; access for firefighting vehicles and equipment, as well as evacuation for residents, is provided from more than one point; necessary fire trails and fuel breaks are provided; structures are built consistent with the most current building code and fire code requirements for high fire hazard areas ~~fire-resistant materials are used exclusively in construction~~; and adequate clearances from structures and use of fire-resistant plants in any landscaping is required.

**EHS-4.i 5.3.e** **Conduct Life Safety Assessments.** Conduct a life safety assessment that considers the costs of fire safety maintenance prior to the County purchase of new land and facilities. Where feasible locate new essential public facilities outside of high fire risk areas, including hospitals and health care facilities, emergency shelters, emergency command centers and emergency communication facilities.

**EHS-4.k 5.4.a** **Amended Urban Wildlands Urban Interface (WUI) Regulations.** Work with Marin Fire Agencies ~~Marin fire departments~~ to prepare and adopt WUI regulations for new development and substantial remodels ~~in order~~ to reduce fire hazards in high and extreme fire hazard areas. Track and update standards as the areas of high and extreme fire hazards are re-defined.

**EHS-4.d 5.4.b** **Review Applications for Fire Safety.** Ensure new development meets all current building code and fire safety standards, including but not limited to ensuring the provision of an adequate water supply for fire suppression, providing sufficient road width for emergency vehicles and equipment, as well as evacuation for residents provided from more than one point. Require applicants to identify identification and maintenance of defensible space around structures, and that structures are built consistent with the most current build code and Cal Fire requirements for high fire hazard areas. ~~and compliance with fire safety standards, and~~ Continue to work with local and State fire agencies to ensure that the California Fire Code (with local amendments), County Development Code, and State and local standards for construction are applied uniformly countywide.

**EHS-4.e 5.4.c** **Require Compliance with Fire Department Conditions.** Continue to refer land development and building permit applications to the County Fire Department or

local fire district for review, and incorporate their recommendations as conditions of approval as necessary to ensure public safety. Continue to require compliance with all provisions of the most recently adopted version of the California Fire Code (with local amendments).

**EHS-4.e 5.4.d** **Require Sprinkler Systems.** Continue to require installation of automatic fire sprinkler systems in all new structures and existing structures undergoing substantial remodeling, and provide incentives for sprinkler installation in all other habitable structures, especially those in high fire hazard areas.

**EHS-4.f 5.4.e** **Require Fire-Resistant Roofing and Building Materials.** Continue to require and provide incentives for Class A fire-resistant roofing for any new roof or replacement of more than 50% of an existing roof. Work with Marin County fire departments to prepare and adopt an ordinance requiring fire-resistant building materials in ~~extreme~~ high fire hazard areas.

**EHS-5.4.f** **Reduce Risk for Non-Conforming Development.** For existing non-conforming development, the County should work with property owners to improve or mitigate access, water supply and fire flow, signing, and vegetation clearance to meet current State and/or locally adopted fire safety standards.

**EHS-4.h 5.5.a** **Require Adequate Clearance-Vegetation Removal.** Require standards for clearance of vegetation on vacant lots, and around structures, and landscaped areas to ensure timely and adequate removal of potential fire fuel on both public and private property according to State requirements (Public Resource Code 4291) and local ordinances. ~~Require Adequate Clearance-Require standards for clearance of vegetation on vacant lots, and around structures, and landscaped areas to ensure timely and adequate removal of potential fire fuel on both public and private property.~~

**EHS-4.i 5.5.b** **Use Varied Implement Ecologically Sound Methods of Vegetation Management-to Provide Fuel Breaks and Fire Suppression.** Collaborate with the Marin Wildfire Prevention Authority Ecologically Sound Practices Partnership which focuses on developing best management practices for fuel reduction projects in wildlands, provides subject matter expertise for project development, and environmental regulatory compliance. Use the best fuel reduction methods (depending on the time of year, fuel types, reduction prescriptions, presence of sensitive biological resources, and cost to implement the Marin County Community Wildfire Protection Plan and Marin Wildfire Prevention Authority projects. This may include using California Department of Forestry inmate crews, the Tamalpais Fuel Crew, the Marin Conservation Corps, animal grazing, or fuel reduction contractors.

**EHS-4.g 5.5.c** **Develop and Maintain Fuel Breaks and Vegetation on Access Routes.** Work with the Marin Fire Agencies, other public agencies, utility districts, and private landowners to construct and maintain ecologically sound fuel breaks and manage

vegetation along emergency access routes to facilitate effective fire suppression and evacuation.

**EHS-5.5.d** **Require Fuel Reduction and Management Plans for New Developments.** The County should require all new development projects with land classified as state responsibility areas (Public Resources Code Section 4102), land classified as high or very high fire hazard severity zones (HFHSZ or VHFHSZs; Section 51177), or within areas defined by local fire agencies as a “wildland urban interface” (WUI), to prepare a long-term comprehensive ecologically sensitive fuel reduction and management program, including provisions for multiple points of ingress and egress to improve evacuation and emergency response access and adequate water infrastructure for water supply and fire flow, and fire equipment access. (See Gov. Code, Section 66474.02.). The ecologically sensitive fuel reduction program should be consistent with MWPA’s ecological sensitive vegetation management guidelines, as well as federal, state, and County environmental and biological resource protection regulations. Where environmental sensitive resources or habitats could be impacted by vegetation removal, the property owner shall observe all regulations for the protection of habitat values.

~~**EHS-5.o** **Support a Fire Management Plan.** Adopt a resolution supporting a Fire Management Plan (including a fuel break plan) and encourage Marin cities and towns to also support its recommendation. [Now a part of 4.3a since there is a CWPP]~~

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>7</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

Figure 2-24 Goal EHS-5. Safety from Wildfire, Program Implementation Table

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-5.1a Collaborate with Marin Fire Agencies on Implementing the Community Wildfire Protection Plan.	Fire Agencies / CDA	Existing budget & may require	High	Ongoing

<sup>7</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).

<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
		grant funding		
EHS-5.1b Continue FIRESafe Marin Program	Fire Agencies	Existing budget	Med	Ongoing
EHS-5.1.c Provide Information About Fire Hazards	Fire Agencies,	Existing budget	Med	Ongoing
EHS-5.1.d Identify Areas with Insufficient Evacuation Opportunities	Fire Agencies, CDA	Existing budget	High	Short-Term
EHS-5.1.e Commit Funding for Evacuation Safety	Fire Agencies	Existing budget & may require grant funding or additional revenue	High	Short-Term
EHS-5.1.f Monitor State Requirements for Evacuation Routes	Fire Agencies, CDA, DPW	Existing budget	Med	Ongoing
EHS-5.1.g Continue to Use Technology to Promote Fire Safety	Fire Agencies	Existing budget & may require grant funding or additional revenue	Med	Ongoing
EHS-5.2.a Assess and Project Future Fire Protection Needs	Fire Agencies	Existing budget	Med	Med-Term
EHS-5.2.b Consider Development Impacts to Fire Service	Fire Agencies, CDA, DPW	Existing budget	High	Ongoing
EHS-5.2.c Describe Training Needs for Emergency Services	Fire Agencies	Existing budget	Med	Short-Term
EHS-5.2.d Continue to Improve Street Addressing	Fire Agencies	Existing budget	Med	Ongoing
EHS-5.3.a Continue to Revise Adopted Standards	Fire Agencies, CDA	Existing budget	Med	Ongoing
EHS-5.3.b Regularly Update Development Standards	Fire Agencies, CDA	Existing budget	Med	Ongoing
EHS-5.3.c Require Rebuilding After a Disaster to Meet Current Standards	CDA, Fire Agencies	Existing budget	High	Short-Term
EHS-5.3.d Restrict Land Divisions	CDA, Fire Agencies	Existing budget	Med	Ongoing
EHS-5.3.e Conduct Life Safety Assessments	Fire Agencies	Existing budget & may require	Med	Ongoing

<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
		grant funds or additional revenue		
EHS-5.4.a Amend Urban Wildlands Interface Regulations	CDA, Fire Agencies	Existing budget	Med	Short-Term
EHS-5.4.b Review Applications for Fire Safety	CDA, DPW, Fire Agencies	Existing budget	High	Ongoing
EHS-5.4.c Require Compliance with Fire Department Conditions	CDA, DPW, Fire Agencies	Existing budget	High	Ongoing
EHS-5.4.d Require Sprinkler Systems	CDA, DPW, Fire Agencies	Existing budget	High	Ongoing
EHS-5.4.e Require Fire Resistant Roofing and Building Materials	CDA, DPW, Fire Agencies	Existing budget	High	Ongoing
EHS-5.4.f Reduce Risk for Non-Conforming Development	CDA, DPW, Fire Agencies	Existing budget	High	Ongoing
EHS-5.5.a Require Adequate Vegetation Removal	Fire Agencies	Existing budget	High	Ongoing
EHS-5.5.b Implement Ecologically Sound Methods of Vegetation Management	Fire Agencies	Existing budget	Med	Short-Term
EHS-5.5.c Develop and Maintain Fuel Breaks and Vegetation on Access Routes	Fire Agencies	Existing budget	High	Ongoing
EHS-5.5.d Require Fuel Reduction and Management Plans for New Development	Fire Agencies, CDA, DPW	Existing budget & may require additional revenue	High	Short-Term

## What Are the Desired Outcomes?

### **Goal EHS-6: Resilience to Climate Change**

Resilience to Climate Change. Manage the threat of climate risks to the current and future Marin community.

#### **Policies**

- EHS-6.1** **Increase Community Resilience.** Increase community resilience to climate change and protection of vulnerable populations. Engage in community education and community-driven planning that leads to identification of community priorities that increase resilience.
- EHS-6.2** **Increase Infrastructure, Building, and Services Resilience.** Increase the resilience of Marin County infrastructure, buildings, and services with an initial focus on nature-based solutions.
- EHS-6.3** **Adapt to Sea Level Rise.** Safeguard the Marin shoreline, coastline, natural resources, recreational resources, and urban uses from flooding due to rising sea levels.
- EHS-6.4** **Plan for Extreme Heat and Weather Events.** Create a community that can continue to function and thrive with an increase in average temperatures, extreme heat days, and severe weather events.
- EHS-6.5** **Adapt Water Supply.** Prepare for a reduced, long-term water supply resulting from more frequent and/or severe drought events.

#### *Why is this important?*

**Environment:** Increased climate hazards create vulnerabilities in both natural and human-made systems that depend on stable and healthy ecosystems.

**Economy:** While resilience is often viewed through the lenses of social equity and environmental quality, business continuity and reducing operational costs and risks is just as vital for Marin's climate resiliency and livability.

**Equity:** Climate hazards will disproportionately affect Marin's vulnerable residents. Increasing the capacity of vulnerable communities to respond and cope with environmental hazards ensures a strong community.

#### *How will results be achieved?*

### **Implementing Programs**

- EHS-6.1.a** **Regular Review of Adaptation and Resiliency Strategies.** Periodically review the County's climate adaptation and resiliency strategies and update them as needed to ensure compliance with state laws and community needs. Use best practices to

review and amend at regular intervals all relevant public codes to incorporate the most current technical knowledge.

- EHS-6.1.b** **Develop Adaptation Plans.** Develop adaptation plans that lead to community resilience. Adaptation plans can be hazard specific or cover multiple hazards, they can cover the entire county or individual communities, but all adaptation plans should recognize the interactions among climate change impacts and should accomplish the following: be consistent with the goals, policies, and programs in this Safety Element; integrate and prioritize equity and social justice; lead to County actions that improve resilience; be phased over time, for example, by including adaptation pathways with identified triggers; incorporate nature-based measures; consider both public and private roles; include identified funding mechanisms for construction, operations and maintenance; include metrics for monitoring; be developed in coordination with relevant jurisdictions, agencies, organizations, and other stakeholders; include measures for continued coordination; and identify a lead jurisdiction, agency or organization.
- EHS-6.1.c** **Integrate Adaptation in Plan Documents.** Integrate climate adaptation into other plans, ordinances, and programs that dictate land use decisions in the community, such as the Countywide Plan, the Marin County Climate Action Plan, County Local Coastal Program, Marin County Multijurisdictional Local Hazard Mitigation Plan, community and area plans, and the Marin County Development Code.
- EHS-6.1.d** **Implement Climate Action Plan.** Implement the adaptation measures as contained in the Marin County Climate Action Plan necessary to increase unincorporated communities' resiliency.
- EHS-6.1.e** **Identify Funding and Support.** Identify funding programs and other support services for local agencies to pursue that could help provide resources for County and community adaptation efforts.
- EHS-6.1.f** **Disclose Current and Future Hazards.** Develop a resale inspection permit program that provides disclosure of hazard risk information to prospective buyers prior to the sale of property. The program should include detailed hazard information, such as very high and high hazard wildfire severity zones, flood zones, tsunami and future sea level rise inundation areas, and Alquist-Priolo zones.
- EHS-6.1.g** **Develop a Property Rating System.** Based on the information in the resale inspection permit program, develop a property rating system available to the public for the purpose of evaluating risks from current and future hazards. Evaluation of hazards may be one function of a larger rating system or the sole function. The primary purpose of including hazards information is to inform prospective buyers and renters of the risks associated with a property prior to the commencement of any property sale, rental, or lease. Upon completion of the Property Rating System, make the information available to potential renters prior to completing a rental or lease agreement.

**EHS-6.1.h** **Use Environmentally Sensitive Adaptation Strategies.** Where feasible the County should encourage the use of existing natural features and ecosystem processes, or the restoration thereof, in adaptation projects and measures. This includes systems and practices that use or mimic natural processes, such as permeable pavements, bioswales, and other engineered systems, such as levees that are combined with restored natural systems, to provide clean water, conserve ecosystem values and functions, and provide a wide array of benefits to people and wildlife. Proposals addressing adaptation must analyze the feasibility of natural features and ecosystem process before proposing alternative measures.

**EHS-6.1.i** **Establish and Leverage Partnerships.** Explore regional compacts or less formal partnerships with regional entities (both public and private) that can assist communities with technical assistance and potential funding. Collaborate with local and regional partners to support business resiliency through preparedness education, trainings, and resources. Align adaptation goals and strategies with local community groups and private sector entities to increase effectiveness.

**EHS-6.1.j** **Assess the Feasibility of Redevelopment.** Encourage private property owners to evaluate redevelopment of sites subject to loss from destructive flooding or wave action. Consider actions the County could take to facilitate the relocation of development out of flood hazard areas and Very High Wildfire Severity Hazard Zones. Consider an acquisition and buyout program which includes acquiring land from the landowner(s) and restricting future development on the land. Engage communities on the topic of managed retreat and provide assistance to establish a supporting funding mechanism such as a community land trust or repetitive loss program or Geologic Hazard Abatement Districts. Consider use of sites repeatedly struck by climate hazards for flood-adapted restoration or recreational areas.

**Implementing Programs for EHS-6.2 Increase Infrastructure, Building, and Services Resilience.**

**EHS-6.2.a** **Minimize Utility Service Interruptions.** Work with utility companies to ensure that power lines serving the unincorporated areas are maintained to avoid power shutoffs, minimize damage during extreme events, and reduce the risk of wildfires.

**EHS-6.2.b** **Assess Risk in County-Owned Buildings and Facilities.** Support capital planning to incorporate a climate risk evaluation of County-owned buildings and facilities that identifies risks from climate hazards, identifies measures to minimize risk, and provides a plan(s) for making improvements.

**EHS-6.2.c** **Broaden Communication Service and Minimize Communication Service Interruptions.** Prepare an analysis of gaps in communication services within the County and identify measures for broadening coverage, especially where communication facilities are needed to provide essential services. The analysis should include recommendations for new facilities locations, whether facilities can serve multiple functions, prioritization of facility locations that considers both the



communication services and the environmental impacts and administrative burdens of such facilities. (Also see Implementing Program EHS-1.1b under Goal EHS-1).

**EHS-6.2.d** **Support Resiliency for Financially Constrained Households.** Identify funding opportunities, including grant assistance programs, to support structural strengthening, renewable energy generation systems, and weatherizing and other energy efficiency activities, for low-income renters and property owners. (Also see Implementing Programs EHS1.1.b under Policy EHS-1.1 and Program 1.4.a under Policy EHS-1.4.)

**EHS-6.2.e** **Integrate Natural Infrastructure.** During the development review process, when developing alternatives and addressing adaptation in proposed projects, the County should require applicants to identify natural infrastructure that may be used through the conservation, preservation, or sustainable management of open space to reduce climate change hazards. Proposals addressing adaptation must analyze the feasibility of integrating natural infrastructure before proposing alternative measures.

### **Implementing Programs for EHS-6.3 Adapt to Sea Level Rise**

**EHS-6.3.a** **Employ Sea Level Rise Scenarios in Planning.** Recent predictions of sea level rise for the San Francisco Bay region by BCDC and USGS based on climate models and hydrodynamic modeling of the San Francisco Bay Estuary Institute indicate 16 inches of rise by mid-century and 55 inches by 2100. The State periodically recommends and updates a range of sea level rise scenarios for planning purposes. The guidance is developed using the best available science and the modeling is based on internationally accepted greenhouse gas scenarios used by the United Nations Intergovernmental Panel on Climate Change. The County should cooperate with state, federal, and other monitoring agencies to track bay and ocean levels and share baseline topographic and resource data obtained by the County in implementing its own projects to enhance hydrodynamic and ecosystem modeling efforts and assessment of regional climate change impacts. Use official estimates for mean sea level rise and topographic data for environmental review. Project design and environmental review for development applications and County sponsored projects infrastructure should incorporate official mid-century sea level rise estimates, the most current State of California recommendations for sea level rise scenarios as appropriate for the risk tolerance and expected life of the project, and require adaptive strategies for end-of-century sea level rise for any such project with expected life times beyond 2050.

**EHS-6.3.b** **Amend the Bayfront Conservation Combining District (BFC).** Amend the Bayfront Conservation Combining District, Marin County Code Title 22, to incorporate sea level rise adaptation measures that promote public safety consistent with the goals of the BFC.

**EHS-6.3.c** **Explore Future Bayland Corridor Amendment.** Explore expanding and aligning the Baylands Corridor and BFC area to align both the geographic extent and the policy

direction. The geographic extent should include areas subject to future flooding and related policies and programs should include standards to protect from or adapt to rising sea level.

**EHS-6.3.d** **Advocate with State and Federal Agencies.** Advocate with state and federal resource agencies for new policies making living shoreline projects more easily permitted by recognizing the long-term habitat and biodiversity benefits.

**EHS-6.3.e** **Update Other Elements of the Countywide Plan.** Update other Elements of the Countywide Plan to reflect the County’s approach to Sea Level Rise planning, where nature-based alternatives are evaluated and implemented whenever they will achieve project objectives.

**EHS-6.3.f** **Take a Leadership Role in Multijurisdictional Sea Level Rise Planning.** Identify funding and resources for a multijurisdictional approach to sea level rise adaptation planning. Include representation from each jurisdiction and identify countywide priorities for adapting to sea level rise. (Also see Develop Adaptation Plans EH-6.1.b.)

**EHS-6.3.g** **Plan for Climate Change Impacts, Including Sea Level Rise. Consider Sea Level Rise in Flood Control Planning and Projects.** Consider sea level rise in future countywide and community plan flood control efforts. Apply for membership in the National Flood Insurance Program’s (NFIP) Community Rating System (CRS), and as appropriate through revisions to the Marin County Code, obtain reductions in flood insurance rates offered by the NFIP to community residents. official mid-century and end-of-century sea level rise estimates in Participate in the Bay Area Climate & Energy Resilience Project and its March 2013 Proposed 12-Month Action Plan, developed by the Bay Area Joint Policy Committee of the Association of Bay Area Governments. Cooperate with FEMA in its efforts to comply with recent congressional mandates to incorporate predictions of sea level rise in its Flood Insurance Studies and FIRM. Periodically revise the Marin County Hydrology Manual to, at a minimum, incorporate use of the most recent updated rainfall frequency data from NOAA’s Atlas 14 Volume 6, Vers. 2.1 California (rev. 2012).

**EHS-6.3.h** **Partner to Protect Key Infrastructure Owned and Operated by Others.** The County is dependent on key infrastructure such as water supply systems, waste water treatment systems, roads and bridges, electricity grid, and telecommunications that are owned and maintained by numerous agencies and private companies. Marin County should develop a systematic approach to collaborating and working cooperatively with these entities to ensure the long-term, continued functioning of key infrastructure within Marin County.

**EHS-6.3.i** **Limit Seawall Barriers.** Limit repair, replacement, or construction of coastal sea walls and erosion barriers in order to avoid offsite impacts consistent with Local Coastal Program requirements and San Francisco Bay Conservation and

Development Commission standards, and as demonstrated to be necessary to protect persons and properties from rising sea level.

**EHS-6.3.j** **Strengthen Sea Level Rise Education and Outreach Programs.** Sea level rise adaptation planning can only be successful when communities understand the interrelated impacts of future sea level rise and the range of options to address those impacts through time. The County should develop more robust sea level rise education and outreach to help communities have informed discussions around adaptation options, adaptation pathways, costs, and where responsibilities for protecting assets lie.

**EHS-6.3.k** **Study Impacts of Rising Groundwater Levels from Sea Level Rise.** Conduct studies on the effects of rising groundwater on the community and the built environment including the potential transport of toxic or hazardous chemicals in the soil at contamination sites and the effects on septic systems. In areas where rising groundwater levels could adversely impact the functioning of existing or future septic systems, the County will undertake a study to identify the hazards and identify solutions.

**Implementing Programs for EHS-6.4 Plan for Extreme Heat and Weather Events.**

**EHS-6.4.a** **Develop Resilience Hubs.** Work with vulnerable populations to develop and implement a plan that identifies priority resilience hub locations and outlines necessary steps to build hubs that serve multiple purposes, including community centers in non-emergency and emergency situations, operations and aide distribution centers in emergencies, and recovery centers post emergencies. The plan should include siting criteria that prioritizes serving the needs of vulnerable populations and using that criteria to identify potential sites in the county. For each priority site, the plan should identify potential hub functions, needed improvements to existing facilities, development and operation costs (including any avoided costs as a result of building the hubs), feasibility of installing microgrids to sustain power in emergencies, and potential funding and financing mechanisms.

**EHS-6.4.b** **Ensure Access to Cooling Centers.** Identify areas in Marin County where cooling centers are needed and where they can be located within resilience hubs. Identify ways for individuals with restricted mobility to reach cooling centers

**EHS-6.4.c** **Support Heat Risk Awareness.** Provide guidance to employers, residents, and workers to ensure that outdoor workers are aware of the harm posed by climate-related heat effects and how to reduce them. Partner with private sector and community-based organizations to increase information spread.

**Implementing Programs for EHS-6.5 Adapt Water Supply.**

**EHS-6.5.a** **Plan for Drought.** Prepare for a reduced, long-term water supply resulting from more frequent and severe drought events, including working with regional water providers to implement extensive water conservation measures and ensure

sustainable water supplies including increasing recycled water infrastructure and capacity.

**EHS-6.5.b Partner with Water Providers to Improve Water Storage and Efficiency.** Improve water storage and efficiency by partnering with the following water managers: water agencies and irrigation districts to explore ways to improve and increase storage capacity and generation efficiency; utility providers to upgrade water systems to accommodate projected changes in water quality and availability; and local water providers in the county to increase participation in water conservation programs to reduce water use throughout Marin County.

**EHS-6.5.c Maintain Adequate Agricultural Water Supply.** The County should encourage policies that preserve and protect adequate and affordable agricultural irrigation water supplies for commercial farmers and ranchers to maximize potential wildland fire mitigation, habitat benefits, carbon sequestration, and economic activity. (See Goal AG-1 in the Agriculture and Food Section, PFS-2 in the Public Facilities and Services Section, and WR-3 in the Water Resources Section.)

## Program Implementation

The following table summarizes responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs. Program implementation within the estimated time frame<sup>8</sup> will be dependent upon the availability of adequate funding and staff resources.

[Note to Reader: Program Implementation Tables were moved from the end of Section 2.6 Environmental Hazards in the CWP to be included at the end of each goal. Table text is all new and is not shown with underline.]

**Figure 2-25: Goal EHS-6. Resilience to Climate Change, Program Implementation Table**

Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-6.1. a Regular Review of Adaptation and Resiliency Strategies	CDA, DPW, County Parks, Fire Agencies, OES, HHS	Existing budget & new grant funds or revenue	Med	Long-Term & Ongoing
EHS-6.1.b Develop Adaptation Plans	CDA, DPW	Will require new grant funds or revenue	Med	Short-Term

<sup>8</sup> Time frames include: Immediate (0-1 years); Short term (1-4 years); Med. term (4-7 years); Long term (over 7 years); and Ongoing (existing programs already in progress whose implementation is expected to continue into the foreseeable future).

<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
EHS-6.1.c Integrate Adaptation in Plan Documents	CDA, DPW	Existing budget	Med	Long-Term
EHS-6.1.d Implement Climate Action Plan	CDA, DPW	Existing budget	High	Long-Term & Ongoing
EHS-6.1.e Identify Funding and Support	CDA, DPW	Existing budget	High	Short-Term
EHS-6.1.f Disclose Current and Future Hazards	CDA	Existing budget & may require additional revenue	High	Short-Term
EHS-6.1.g Develop a Property Rating System	CDA	Existing budget & may require additional revenue	High	Short-Term
EHS-6.1.h Use Environmentally Sensitive Adaptation Strategies	CDA, DPW, County Parks	Existing budget	Med	Short-Term and Ongoing
EHS-6.1.i Establish and Leverage Partnerships	Countywide	Existing budget	High	Ongoing
EHS-6.1.j Assess the Feasibility of Redevelopment	CDA	Existing budget & may require additional resources		
EHS-6.2.a Minimize Utility Service Interruptions	Private & Public Utilities, DPW, OES	Existing budget and may require additional funds	High	Short-Term
EHS-6.2.b Assess Risk in County-Owned Building and Facilities	DPW, OES	Requires additional funding	High	Med-Term
EHS-6.2.c Broaden Communication Service and Minimize Communication Service Interruptions	Private Communication Companies, OES, Fire Agencies, CDA, County Parks	Existing budget	High	Med-Term



Program	Responsibility	Potential Funding	Priority	Time Frame
EHS-6.2.d Support Resiliency for Financially Constrained Households	CDA, OES, Fire Agencies,	Will require additional revenue	High	Long-Term
EHS-6.2.e Integrate Natural Infrastructure	CDA, DPW, state & federal resource agencies	Existing budget	Med	Long-Term
EHS-6.3.a Employ Sea Level Rise Scenarios in Planning	CDA, DPW, County Parks	Existing budget	Med	Short-Term & Ongoing
EHS-6.3.b Amend the Bayfront Conservation Combining District	CDA	Existing budget	High	Short-Term
EHS-6.3.c Explore Future Bayland Corridor Amendment	CDA	Existing budget	Med	Med-Term
EHS-6.3.d Advocate with State and Federal Agencies	Countywide	Existing budget	Med	Short-Term
EHS-6.3.e Update Other Elements of the Countywide Plan	CDA	Existing budget	Med	Long-Term
EHS-6.3.f Take a Leadership Role in Multijurisdictional Sea Level Rise Planning	DPW, CDA, County Parks, Countywide	Existing budget & may require additional funding	High	Short-Term
EHS-6.3.g Consider Sea Level Rise in Flood Control Planning and Projects	DPW	Existing budget	High	Ongoing
EHS-6.3.h Partner to Protect Key Infrastructure Owned and Operated by Others	Countywide, CDA, DPW	Existing budget	Med	Med-Term
EHS-6.3.i Limit Seawall Barriers	CDA	Existing budget	Low	Ongoing
EHS-6.3.j Strengthen Sea Level Rise Education and Outreach Programs	DPW, CDA, County Parks	Existing budget & may need additional resources	High	Short-Term
EHS-6.3.k Study Impacts of Rising Groundwater Levels from Sea Level Rise	CDA	Existing budget & will require additional grant funding	Med	Med-Term
EHS-6.4.a Develop Resilience Hubs	CDA	Existing budget & will require additional	High	Med-Term

<b>Program</b>	<b>Responsibility</b>	<b>Potential Funding</b>	<b>Priority</b>	<b>Time Frame</b>
		grant funding		
EHS-6.4.b Ensure Access to Cooling Centers	CDA, OES, Fire Agencies	Existing budget & may require additional resources	Med	Long-Term
EHS-6.4.c Support Heat Risk Awareness	CDA	Existing budget	Med	Long-Term
EHS-6.5.a Plan for Drought	Countywide, Water Districts	Existing budget	High	Long-Term
EHS-6.5.b Partner with Water Providers to Improve Water Storage and Efficiency	Countywide, Water Districts	Existing budget	High	Long-Term
EHS-6.5.c Maintain Adequate Agricultural Water Supply	Countywide, Water Districts	Existing budget	Med	Long-Term

## Program Implementation and Monitoring

### Relationship of Goals to Guiding Principles

Figure 2-26: Relationship of Goals to Guiding Principles Table

This figure illustrates the relationship of each goal in this Section to the Guiding Principles.

Goals	Guiding Principles	Link equity, economy, and the environment locally, regionally, and globally.	Minimize the use of finite resources, and use all resources efficiently and effectively.	Reduce the use and minimize the release of hazardous materials.	Reduce greenhouse gas emissions that contribute to global warming.	Preserve our natural assets.	Protect our agricultural assets.	Provide efficient and effective transportation.	Supply housing affordable to the full range of our members of the workforce and diverse community.	Foster businesses that create economic, environmental, and social benefits.	Educate and prepare our workforce and residents.	Cultivate ethnic, cultural, and socioeconomic diversity.	Support public health, safety, and social justice.
EHS-1 Equitable Community Safety Planning		•									•		•
EHS-2 Disaster Preparedness, Response, and Evacuation		•									•		•
EHS-3 Safety from Seismic and Geologic Hazards		•									•		•
EHS-4 Safety from Flooding		•									•		•
EHS-5 Safety from Wildfire		•				•					•		•
EHS-6 Resilience to Climate Change		•				•			•		•		•





## How Will Success Be Measured

### Indicator Monitoring

Nonbinding indicators, benchmarks, and targets will help to measure and evaluate progress.<sup>9</sup> This process will also provide a context in which to consider the need for new or revised implementation measures.

**Figure 2-27 Indicator Monitoring Table**

<b>Indicator</b>	<b>Benchmark</b>	<b>Target</b>
Number of Marin residents trained in GetReady, CERT, and Voluntary Disaster Service Workers.	Pending	2.5% of county population trained by 2025 and 3% trained by 2030.
Number of county employees trained as disaster service workers to federal standards as documented by County Human Resources.	Pending	100% of County emergency first responders, Emergency Operations Center staff, and other County employees with designated disaster response roles by 2025 and maintain indefinitely. 100% of trained employees to repeat at least one disaster response training class once every two years.
Regularly updated climate change modeling information and mapping.		Triannual review and revisions, if needed, to the County’s climate change modeling projections and hazard mapping.
Number of retrofitted or relocated County buildings and critical facilities.		25% of identified at-risk County-owned structures and critical facilities retrofitted or relocated by 2030, and 50% retrofitted or relocated by 2050.
Number of retrofitted or relocated miles of County roads.		25% of identified at-risk County-maintained road miles retrofitted or relocated by 2040, and 50% retrofitted or relocated by 2050.

<sup>9</sup> Many factors beyond Marin County government control, including adequate funding and staff resources, may affect the estimated time frame for achieving targets and program implementation.



Reviewed and updated climate adaptation and resiliency strategies.		Annual review of climate adaptation and resiliency strategies, and updated strategies as needed, in perpetuity.
Percentage of upgraded County-maintained utilities facilities and infrastructure.		25% of identified at-risk County-maintained utilities facilities and infrastructure upgraded by 2030, 50% upgraded by 2035.
Regularly updated vulnerable communities database and mapping.		Following database development, biannual updates of vulnerable communities data and mapping, in perpetuity.

### **Program Implementation**

The ~~Program Implementation Tables summarizing responsibilities, potential funding priorities, and estimated time frames for proposed implementation programs appear below the programs for each goal. Program implementation within the estimated time frame will be dependent upon the availability of adequate funding and staff resources.~~

[Note to Reader: Program Implementation Tables were moved to the end of each Goal section]



CANDIDATE HOUSING SITES – WITH SIZE, LAND USE, ZONING, PROPOSED UNITS  
(INCLUDING DENSITY BONUS)

Site Code	Acres	CWP Land Use (codes at end of table)	Zoning (codes at end of table)	Lower Income	Moderate Income	Above Moderate Income	Proposed Housing Units	With Density Bonus (35%)
1	0.4	MF3	RMP-6	-	3	-	3	4
2	3.0	GC	CP	72	-	-	72	97
3	6.6	NC	RMPC	98	68	-	166	224
4	148.7	SF3	A2-B4	-	-	139	139	188
5	33.0	PF-OS	PF	254	-	-	254	343
6	20.1	GC	CP	60	60	60	180	243
7	5.5	GC	CP	136	-	-	136	184
8	9.5	PF-SF6	PF-RSP-4.36	-	59	12	71	96
9	7.7	PF-SF6	PF-RSP-5.8	186	-	-	186	251
10	7.5	C-NC	C-VCR	64	11	-	75	101
11	522.4	PR	RMP-0.1	90	-	-	90	122
12	774.6	PD	A2	600	600	600	1,800	2,430
13	2.9	GC	H1	-	60	-	60	81
14	14.3	SF5	A2-B2	71	13	-	84	113
15	1.8	NC	RMPC-6	45	-	-	45	61
16	24.6	SF3	A2-B4	516	-	-	516	697
17	40.6	AG2	ARP-20	-	-	98	98	132
18	0.9	C-NC	C-VCR	9	-	-	9	12
19	488.5	AG1	A60	-	-	314	314	424
20	233.8	AG1	A60	-	-	249	249	336
21	10.0	MF2	RSP-4	81	-	57	138	186
22	3.2	PR	RMP-0.1	-	32	-	32	43
23	4.2	PF	PF	108	-	-	108	146
25	0.8	NC	RMPC	-	4	-	4	5
26	16.0	C-RC	C-RCR	-	96	-	96	130
27	0.6	C-NC	C-RMPC	-	9	-	9	12
28	1.2	C-SF5	C-RA-B2	-	7	-	7	9
29	2.5	C-NC	C-VCR-B2	25	-	-	25	34
30	19.6	AG1	ARP-60	-	-	53	53	72
31	0.6	PF-SF4	PF-RSP-2	-	-	5	5	7
32	0.2	C-GC	C-CP	-	8	-	8	11
33	1.0	C-SF3	C-RSP-0.33	-	-	12	12	16
34	3.6	C-SF3	C-RSP-1	-	-	20	20	27
45	3.2	C-RC	C-RCR	-	16	-	16	22
46	2.2	RC	BFC-RCR	36	-	-	36	49
47	2.4	PF-SF5	R1-B2	-	14	-	14	19

Site Code	Acres	CWP Land Use (codes at end of table)	Zoning (codes at end of table)	Lower Income	Moderate Income	Above Moderate Income	Proposed Housing Units	With Density Bonus (35%)
52	49.2	PR	RMP-0.5	-	-	25	25	34
53	59.0	AG1	A60	-	-	26	26	35
54	1.8	SF6	R1	-	15	-	15	20
55	0.9	NC	RMPC-1	9	-	-	9	12
56	13.9	AG1	ARP-60	16	-	-	16	22
57	6.5	PR	RMP-0.2	-	-	26	26	35
58	1.6	GC	C1	36	-	-	36	49
60	0.1	NC	VCR	-	2	-	2	3
61	2.2	GC	H1	26	4	-	30	41
63	2.4	GC	CP	58	-	-	58	78
64	3.6	C-NC	C-VCR	24	-	-	24	32
65	27.9	SF5	A2-B2	-	-	45	45	61
66	16.3	PR	RMP-0.2	-	-	32	32	43
67	4.1	SF6	RA-B1	20	-	-	20	27
68	1.2	SF5	R1-B2	-	15	-	15	20
69	0.6	C-SF4	C-RA-B3	-	3	-	3	4
70	31.4	C-OS	C-OA	50	-	-	50	68
71	2.3	C-NC	C-RMPC	37	-	-	37	50
72	2.6	C-NC	C-VCR-B2	26	-	-	26	35
73	1.0	C-NC	C-VCR-B2	17	-	-	17	23
74	2.1	C-NC	C-VCR-B2	24	-	-	24	32
76	2.4	SF6	R1	56	8	-	64	86
80	0.2	C-GC	C-CP	-	8	-	8	11
81	23.4	RC	RCR	-	-	29	29	39
83	2.7	SF5	A2-B2	-	-	5	5	7
85	0.3	GC	C1	-	5	-	5	7
86	0.7	GC	C1	-	12	-	12	16
88	0.7	GC	C1	-	11	-	11	15
89	4.2	C-SF3	C-RSP-1.6	43	6	1	50	68
93	1.3	SF6	R1	31	-	-	31	42
94	2.0	MF4.5	RMP-16.7	-	13	-	13	18
95	0.9	C-SF6	C-R1	-	-	5	5	7
96	1.4	C-NC	C-VCR	-	19	-	19	26
99	0.3	C-SF6	C-R1	-	-	3	3	4
101	14.7	GC	RMPC	100	-	-	100	135
102	3.0	PR	RMP-0.1	-	4	-	4	5
103	0.8	GC	CP	20	-	-	20	27
104	0.5	MF4.5	RMP-12.45	12	-	-	12	16

Site Code	Acres	CWP Land Use (codes at end of table)	Zoning (codes at end of table)	Lower Income	Moderate Income	Above Moderate Income	Proposed Housing Units	With Density Bonus (35%)
105	0.4	GC	C1	-	8	-	8	11
106	1.3	C-NC	C-VCR-B1	-	11	-	11	15
109	2.0	C-NC	C-VCR-B1	-	13	-	13	18
110	0.7	C-SF3	C-RSP-1.6	13	-	1	14	19
111	0.7	C-NC-PF	C-VCR-B4	-	7	-	7	9
112	0.6	C-NC	C-VCR-B1	-	6	-	6	8
114	55.1	SF3	ARP-2	-	100	28	128	173
115	19.8	C-AG2	C-ARP-10	-	40	-	40	54
116	0.2	NC	RMPC-1	-	4	-	4	5
117	18.3	C-SF5	C-RA-B2	22	16	59	97	131
124	1.0	SF6	R1	-	-	3	3	4
125	0.7	SF6	R1-B1	-	-	-	-	-
126	6.3	C-NC	C-VCR-B1	-	13	17	30	41
131	2.3	C-GC	C-CP	-	10	-	10	14
132	3.1	C-GC	C-CP	-	10	-	10	14
133	6.5	SF3	RA-B4	-	20	-	20	27
134	0.9	SF4	R1-B3	16	-	-	16	22
136	2.6	SF5	R1-B2	-	10	-	10	14
139	0.5	NC	VCR	-	7	-	7	9
140	5.8	SF3	ARP-2	88	-	-	88	119
141	5.8	SF3	ARP-2	-	59	-	59	80
144	19.2	SF3	ARP-2	46	159	-	205	277
146	8.4	PF	PF	-	63	-	63	85
147	1.5			-	-	5	5	7
148	3.1			46	-	-	46	62
<b>Subtotal</b>	<b>2,874.4</b>			<b>3,287</b>	<b>1,741</b>	<b>1,929</b>	<b>6,957</b>	<b>9,392</b>
<b>Credit Sites<sup>[a]</sup></b>								
A	1.8	C-SF5	C-RA-B2	8	-	-	8	8
B	0.2	C-SF5	C-RA-B2	2	-	-	2	2
C	1.2	MF3	RMP-9	1	-	8	9	9
D	0.9	GC	CP	-	-	10	10	10
E	109.5	PR	RMP-0.2	-	-	43	43	43
F	55.2	PF	A2-B2	115	115	-	230	230
G	10.8	MF2	RMP-1.0	-	-	10	10	10
H	25.1	MF2	RMP-2.47	-	-	89	89	89
I	1.0	MF4.5	RMP-34	74	-	-	74	74

Site Code	Acres	CWP Land Use (codes at end of table)	Zoning (codes at end of table)	Lower Income	Moderate Income	Above Moderate Income	Proposed Housing Units	With Density Bonus (35%)
J	0.5	C-SF5	C-RA-B2	2	-	-	2	2
Subtotal	<b>234.0</b>			<b>202</b>	<b>115</b>	<b>160</b>	<b>477</b>	<b>477</b>
ADUs <sup>[b]</sup>	N/A	N/A	N/A	154	77	25	256	256
SB 9 units <sup>[c]</sup>	N/A	N/A	N/A	--	434	434	868	868
<b>Total Proposed Housing Sites</b>							<b>8,558</b>	<b>10,993</b>

SOURCE: MIG, County of Marin; 2022.

*Notes:*

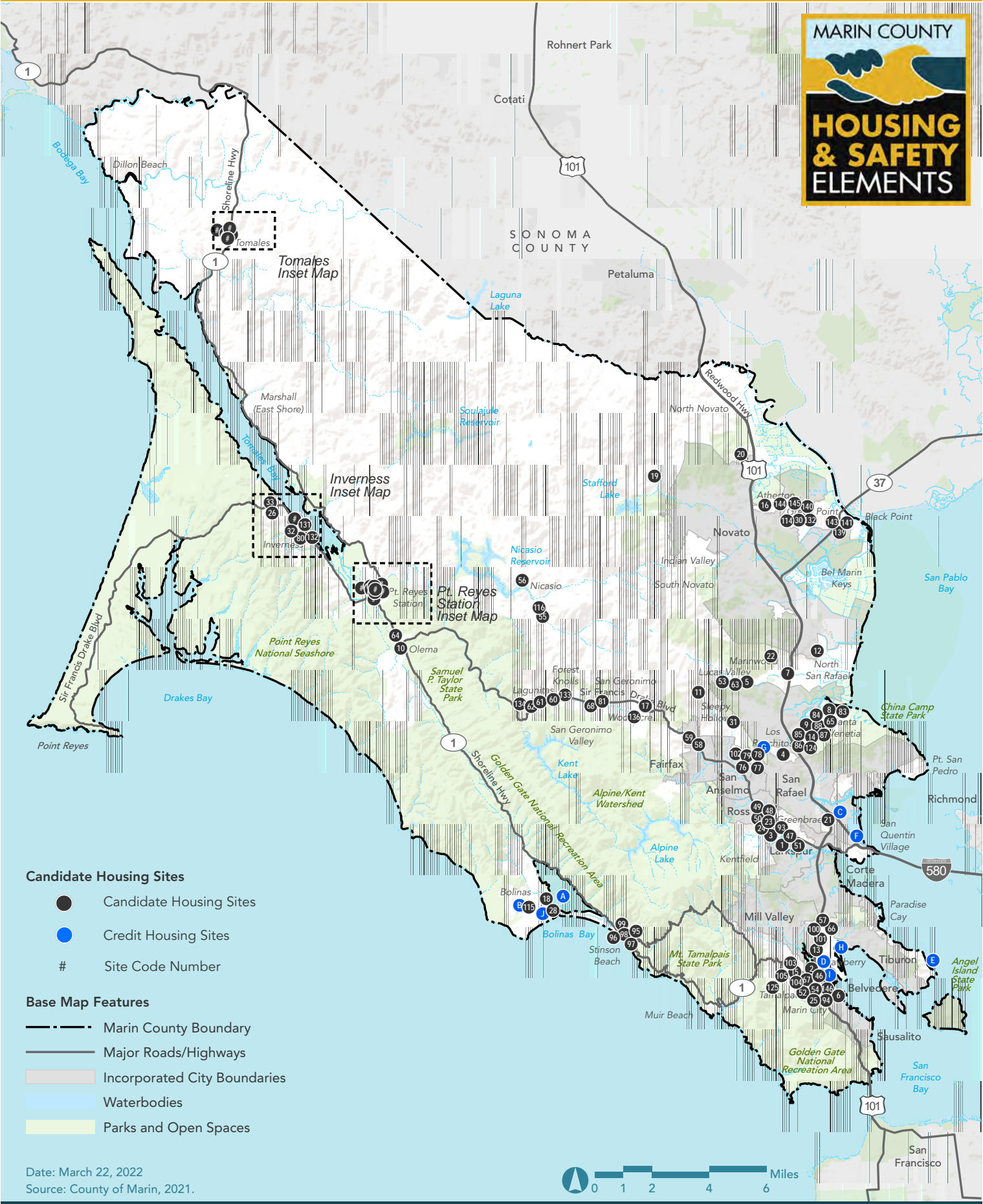
[a] "Credit Sites" are housing units either under construction or approved that are applicable to the County's RHNA target.

[b] "ADU" = Accessory Dwelling Unit

[c] "SB 9 units" are units allowable under SB9, also known as the California Housing Opportunity and More Efficiency (HOME) Act, which requires jurisdictions to allow one additional residential unit onto parcels zoned for single-dwelling units, not including accessory dwelling units (ADUs).

*Land Use and Zoning Abbreviations:*

- A60 = Agriculture and Conservation
- A2 = Agriculture Limited
- A2-B2 = Agriculture Limited
- AP = Administrative and Professional
- R1 = Residential Single Family
- RMP-1 = Residential Multiple Planned
- RSP-4 = Residential Single Family Planned
- RMP-0.2 = Residential Multiple Planned
- RMP-0.1 = Residential Multiple Planned
- RMP-0.5 = Residential Multiple Planned
- C-R1 = Residential Single Family
- RMPC-1 = Residential Commercial Multiple Planned
- C-VCR-B2 = Village Commercial Residential
- C-RSP-7.26 = Residential Single Family Planned
- C-VCR-B1 = Village Commercial Residential
- ARP-2 = Agriculture Residential Planned
- RMP = Residential Multiple Planned
- RMP-6 = Residential Multiple Planned
- BFC-RCR = Resort and Commercial Recreation
- H1 = Limited Roadside Business
- VCR = Village Commercial Residential
- VCR-B2 = Village Commercial Residential
- C-VCR = Village Commercial Residential
- CP = Planned Commercial
- PF = Public Facilities
- PF-RSP-4.36 = Residential Single Family Planned
- PF-RSP-5.8 = Residential Single Family Planned



**Candidate Housing Sites**

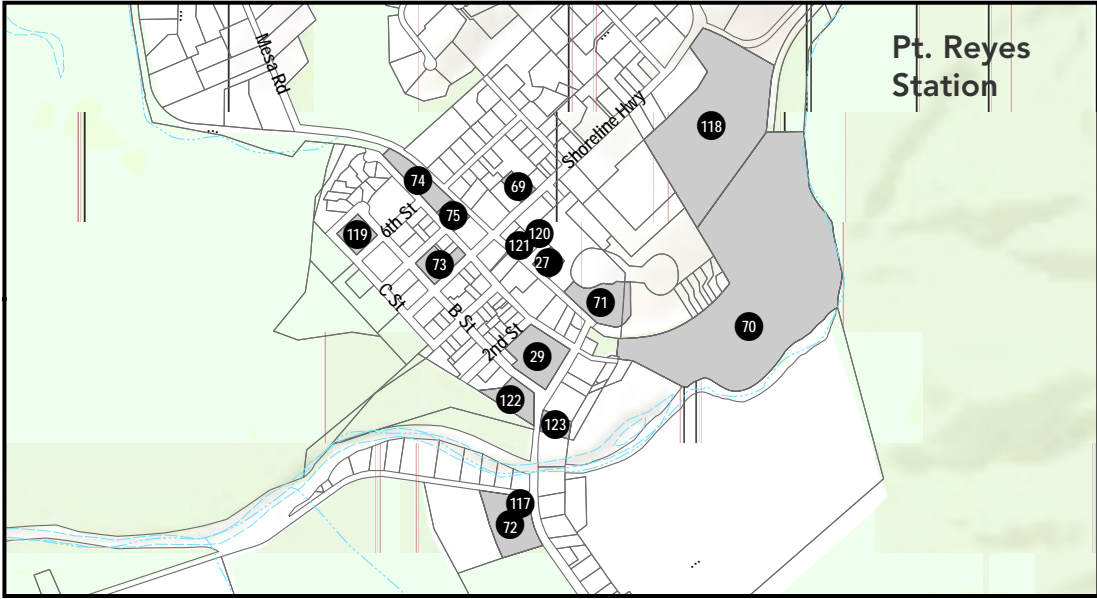
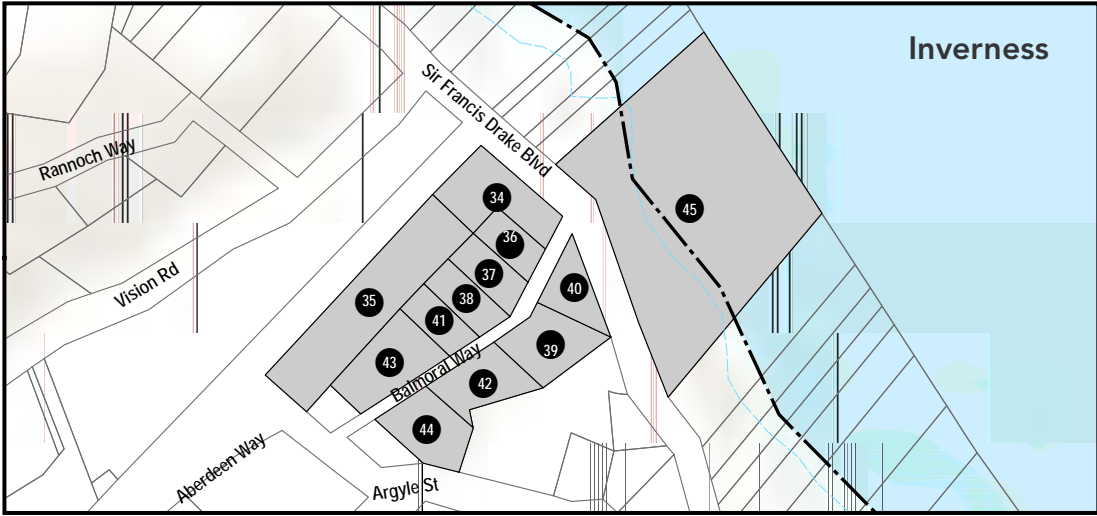
- Candidate Housing Sites
- Credit Housing Sites
- # Site Code Number

**Base Map Features**


- Marin County Boundary
- Major Roads/Highways
- Incorporated City Boundaries
- Waterbodies
- Parks and Open Spaces

Date: March 22, 2022  
 Source: County of Marin, 2021.





- Candidate Housing Sites**
- Candidate Housing Sites
  - # Site Code Number
- Base Map Features**
- Marin County Boundary
  - Major Roads/Highways
  - Incorporated City Boundaries
  - Waterbodies
  - Parks and Open Spaces

 Date: January 31, 2022  
 Source: County of Marin, 2021.



## **Appendix C: Supplemental Air Quality and Greenhouse Gas Emissions Information**

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**Marin County Housing and Safety Element Update EIR**  
**AB2588 "Hot Spots" Facilities in Marin County**  
**Compiled by MIG, Inc.**

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
21894	100 WOOD HOLLOW DRIVE OWNER LLC	100 WOOD HOLLOW	NOVATO	94945	0.001759	0.001545	0.01083	0.063868	5.08E-05	0.000916	0.00088
22443	32 SHADY LANE RESIDENCE	32 SHADY LANE	ROSS	94957	5.93E-05	5.52E-06	0.000491	1.15E-07	1.2E-08	2.15E-07	2.15E-07
24029	33 NORTH APARTMENTS	33 SAN PABLO AVENUE	SAN RAFAEL	94903	4.81E-05	4.23E-05	0.000195	0.000785	1.68E-06	2.97E-05	2.85E-05
112217	ALL STAR RENTS	875 OLIVE AVE	NOVATO	94945	0.00028	0.00028					
17417	ALMAVIA OF SAN RAFAEL	515 NORTHGATE DRIVE	SAN RAFAEL	94903	0.000519	0.000456	0.001997	0.009865	1.47E-05	0.000459	0.000441
14016	ALTA MIRA HOTEL	125 BULKLEY	SAUSALITO	94965						0.0004	0.00028
15123	AMERICAN TOWER - BURDELL MOUNTAIN - 89301	N OF NOVATO	NOVATO	94945	0.000656	0.000576	0.012224	0.012364	2.57E-05	0.000515	0.000495
15124	AMERICAN TOWER - TAMALPAIS - 8521	2001 RIDGECREST BLVD	MILL VALLEY	94941	9.38E-07	8.24E-07	2.54E-06	5.77E-06	5E-09	1E-07	9.6E-08
200057	ANGEL ISLAND STATE PARK	ANGEL ISLAND	TIBURON	94920	0.154746	0.154746					
18679	AT & T /MOBILITY	615 ATHERTON AVE	NOVATO	94945	0.000316	2.94E-05	0.005112	0.001412	4.19E-05	4.53E-05	4.53E-05
17904	AT&T	2ND STREET & B STREET	POINT REYES STA	94956	0.009199	0.008081	0.035569	0.10512	4.14E-05	0.005564	0.005341
18422	AT&T CA	7 PROFESSIONAL CTR PKWY	SAN RAFAEL	94903	0.006694	0.005881	0.024342	0.127187	0.000179	0.001947	0.001869
17991	AT&T CORP	1000 CAMBRIDGE ST	NOVATO	94947	0.000446	0.000392	0.004552	0.01575	5.96E-06	0.000963	0.000925
21603	AT&T MOBILITY	10300 REDWOOD HWY	NOVATO	94945	0.001135	0.000106	0.003059	0.001117	4.11E-05	0.0002	0.0002
16759	AT&T MOBILITY /AT&T SERVICES	3000 BAYHILLS DRIVE	SAN RAFAEL	94901	0.00203	0.001783	0.005489	0.025473	9.95E-06	0.000217	0.000209
17570	AT&T MOBILITY /AT&T SERVICES	SAN QUENTIN, STATE PRISON	SAN QUENTIN	94964	0.000158	1.47E-05	0.005973	0.001711	4.78E-05	5.16E-05	5.16E-05
20039	ATRIA SENIOR LIVING GROUP	853 TAMALPAIS AVE	NOVATO	94947	0.000427	0.000375	0.001591	0.011455	1.75E-05	0.000382	0.000367
18831	AUTODESK INC	3900 CIVIC CENTER DR	SAN RAFAEL	94903	0.024456	0.021484	0.207872	0.168744	0.000134	0.009782	0.009391
16215	BAYVIEW BUSINESS PARK OWNER'S ASSOCIATION	KERNER BLVD & PELICAN BLVD	SAN RAFAEL	94912	73.62229	0.485907		0.004023			
18058	BEST BUY COMPANY, INC	700 DUBOIS STREET	SAN RAFAEL	94901	0.000484	0.000425	0.001916	0.00846	9.62E-06	0.000486	0.000467
17052	BIOMARIN PHARMACEUTICAL INC	46 GALLI DRIVE	NOVATO	94949	9.959819	3.765351	2.145366	8.719888	0.016738	0.263998	0.262363
21363	BIOMARIN PHARMACEUTICAL INC	770 LINDARO STREET	SAN RAFAEL	94901	0.304957	0.130788	0.51229	3.01569	0.01679	0.29496	0.294919
20933	BIOSEARCH TECHNOLOGIES, INC	51 DIGITAL DRIVE	NOVATO	94949	0.000752	0.00066	0.00197	0.014282	1.81E-05	0.000197	0.000189
19381	BLUE LINE STERLIZATION SERVICES	401 BEL MARIN KEYS BLVD, UN	NOVATO	94949	0.00097	0.000823					
100429	BOLINAS FIRE DEPT	100 MESA RD	BOLINAS	94924	0.001844	0.001844					
111262	BOLINAS GARAGE	6 WHARF ROAD	BOLINAS	94924	0.023911	0.023911					
20644	BUCK INSTITUTE FOR AGE RESEARCH	8001 REDWOOD BLVD	NOVATO	94945	0.020351	0.017878	0.043891	0.326811	0.000782	0.005999	0.005759
200750	C & C EQUIPMENT COMPANY	BIG ROCK RIDGE ROAD AND BU	NOVATO	94946	0.000425	0.000373	0.00317	0.008171	1.79E-05	0.000425	0.000408
15816	CAL-POX, INC	103 SHORELINE PARKWAY	SAN RAFAEL	94901	259.3736	1.711866		0.01419			
14571	CALIFORNIA HIGHWAY PATROL	53 SAN CLEMENTE DRIVE	CORTE MADERA	94925	0.003773	0.000351	0.06244	0.026531	8.35E-05	0.000111	0.000111
100267	CALIFORNIA HIGHWAY PATROL	53 SAN CLEMENTE DR	CORTE MADERA	94925	0.0167	0.0167					
653	CENTRAL MARIN SANITATION AGENCY	ANDERSEN DRIVE, EAST END	SAN RAFAEL	94901	28.81053	4.599175	9.073886	4.699828	0.740867	0.895223	0.889633
22540	CHEN RESIDENCE	3910 PARADISE DRIVE	TIBURON	94920	0.001259	0.000117	0.009974	0.002418	1.33E-05	1.5E-05	1.5E-05
109816	CHINA CAMP STATE PARK	SAN PEDRO ROAD ROUTE 1	SAN RAFAEL	94901	0.000164	0.000164					
100555	CITY OF BELVEDERE	85 LAGOON RD	BELVEDERE	94920	0.001076	0.001076					
16106	CITY OF MILL VALLEY	SYCMR PRK NR TH CIRCLE	MILL VALLEY	94941	0.000354	0.000311	0.001069	0.002194	2.28E-06	7.02E-05	6.74E-05
19147	CITY OF MILL VALLEY	1 HAMILTON DRIVE	MILL VALLEY	94941	0.001243	0.001092	0.010731	0.040421	2E-05	0.002685	0.002578
19148	CITY OF MILL VALLEY	450 SYCAMORE AVENUE	MILL VALLEY	94941	1.868933	1.8523	51.57034	4.057698	0.093587	0.030058	0.028856
19149	CITY OF MILL VALLEY	26 CORTE MADERA AVENUE	MILL VALLEY	94941	2.38E-05	2.09E-05	3.91E-05	0.000442	7.62E-07	7.36E-07	7.06E-07
106313	CITY OF MILL VALLEY	450 SYCAMORE AVE	MILL VALLEY	94941	0.012007	0.012007					

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
19177	CITY OF NOVATO	909 MACHIN AVENUE	NOVATO	94945	0.00109	0.000957	0.016387	0.018422	2.96E-05	0.00078	0.000749
19216	CITY OF NOVATO	550 DAVIDSON STREET	NOVATO	94945	0.00057	0.000501	0.000774	0.010009	1.06E-05	0.000324	0.000311
19385	CITY OF NOVATO	134 PIZARRO ROAD	NOVATO	94949	0.000218	0.000192	0.001855	0.001506	1.2E-06	8.73E-05	8.38E-05
20518	CITY OF NOVATO	1560 HILL ROAD	NOVATO	94947	0.000635	0.000558	0.007102	0.012073	2.75E-05	0.000673	0.000646
100222	CITY OF NOVATO	909 MACHIN AVE	NOVATO	94945	0.154746	0.154746					
109944	CITY OF NOVATO - CORPORATION YARD	550 DAVIDSON ST	NOVATO	94945	0.008698	0.008698					
110981	CITY OF SAN RAFAEL	111 MORPHEW ST	SAN RAFAEL	94901	0.017115	0.017115					
15148	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	111 MORPHEW STREET	SAN RAFAEL	94901	0.001474	0.001295	0.00087	0.009113	6.53E-06	0.000195	0.000187
17905	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	677 LINDARO STREET	SAN RAFAEL	94901	0.000629	0.000552	0.001226	0.011403	5.44E-06	0.000639	0.000614
17906	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	3780 KERNER BOULEVARD	SAN RAFAEL	94901	0.00142	0.001247	0.00372	0.017267	5.99E-06	0.000807	0.000774
17908	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	199 3RD STREET	SAN RAFAEL	94901	0.001933	0.001698	0.005066	0.023515	8.16E-06	0.001098	0.001055
17910	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	1400 5TH AVENUE	SAN RAFAEL	94901	0.010713	0.009412	0.028	0.129877	4.9E-05	0.006072	0.005829
17911	CITY OF SAN RAFAEL DEPT OF PUBLIC WORKS	201 FRANCISCO BOULEVARD	SAN RAFAEL	94901	0.000289	0.000254	0.000728	0.008137	1.14E-05	7.76E-05	7.45E-05
21480	CLASSICAL PUBLIC RADIO NETWORK, LLC	200 SUNDIAL ROAD	SAUSALITO	94965	2.43E-05	2.13E-05	0.000201	0.000461	8.71E-07	2.49E-05	2.39E-05
106257	CLIPPER YACHT COMPANY LLC	310 HARBOR DR	SAUSALITO	94965	0.033537	0.033537					
23545	COLLIERS INTERNATIONAL	100 CORTE MADERA, TOWN CE	CORTE MADERA	94925	0.000164	0.000144	0.001146	0.004256	8.98E-06	0.000115	0.00011
15974	COMCAST CABLE	15 SAN MARIN	NOVATO	94945	0.000169	0.000148	0.00051	0.002347	1.09E-06	2.03E-05	1.95E-05
15958	COMCAST CABLE CORPORATION	1111 2ND STREET	SAN RAFAEL	94901	0.032339	0.02841	0.274884	0.223141	0.000178	0.012936	0.012418
19236	COUNTY OF MARIN	3260 KERNER BOULEVARD	SAN RAFAEL	94901	0.004039	0.003548	0.014256	0.076745	0.000175	0.002614	0.002509
100717	COUNTY OF MARIN	850 DRAKE AVE	SAUSALITO	94965	0.004187	0.004187					
18600	COUNTY OF MARIN SANTA VENETIA #5 PUMP STATION	825 VENDOLA DRIVE	SAN RAFAEL	94903	0.00236	0.002073	0.006383	0.029621	1.16E-05	0.000253	0.000243
19096	COUNTY OF MARIN STRAWBERRY CIRCLE PUMP STATION	117 E STRAWBERRY DRIVE	MILL VALLEY	94941	0.000134	0.000117	0.000633	0.002538	5.18E-06	9.14E-05	8.77E-05
106016	COUNTY OF MARIN - GENERAL SERVICES DEPT	#6 MEMORIAL DRIVE	SAN RAFAEL	94903	0.118361	0.118361					
22566	COUNTY OF MARIN C/O SARES REGIS	1600 LOS GAMOS DRIVE	SAN RAFAEL	94903	0.076222	0.048277	0.208815	0.943488	0.002793	0.053008	0.052609
17868	COUNTY OF MARIN, CIVIC CENTER	3501 CIVIC CENTER DR	SAN RAFAEL	94903	0.068364	0.033305	0.153487	0.876162	0.004546	0.024626	0.024567
18789	COUNTY OF MARIN, COVE PUMP STATION	#1 BLACKFIELD DRIVE	TIBURON	94920	0.000987	0.000867	0.006502	0.003796	5.44E-05	2.08E-05	2E-05
18996	COUNTY OF MARIN, DWP	816 PANORAMIC HIGHWAY	MILL VALLEY	94941	0.013341	0.001242	0.220797	0.093819	0.001085	0.000391	0.000391
18424	COUNTY OF MARIN, JUVENILE HALL	16 JEANNETTE PRANDI WAY	SAN RAFAEL	94903	0.000243	0.000213	0.002338	0.003982	8.16E-06	0.000232	0.000223
18705	COUNTY OF MARIN, MARIN CITY SUBSTATION	850 DRAKE AVE, MARIN CITY	SAUSALITO	94965	0.000262	0.00023	0.001059	0.00718	1.52E-05	0.000191	0.000183
19817	COUNTY OF MARIN, MER, BOLINAS	615 HORSESHOE HILL RD	BOLINAS	94924	0.000576	0.000506	0.000778	0.010051	1.14E-05	0.000325	0.000312
19865	COUNTY OF MARIN, MERA	1002 ROBERT DOLLR HLL	SAN RAFAEL	94901	4.48E-05	4.17E-06	0.00041	6.16E-05	0.000215	7.76E-05	7.76E-05
19862	COUNTY OF MARIN, MERA, FORBES HILL	END OF HEPBURN, HTS DR	SAN RAFAEL	94901	2.31E-05	2.15E-06	0.000367	5.73E-05	0.000229		
22628	COUNTY OF MARIN, MERA, PT REYES	SIR FRANCIS DRAK BLVD, MT TIBURON	POINT REYES STA	94956	5.09E-05	4.74E-06	0.01142	0.000356	0.000347	9.9E-05	9.9E-05
19896	COUNTY OF MARIN, MERA, TIBURON	99 1/2 MT TIBURON RD	TIBURON	94920	2.18E-05	2.03E-06	0.000347	1.09E-05	0.00023	8.28E-05	8.28E-05
19250	COUNTY OF MARIN, MT BARNABE	MOUNTAIN KING DRIVE	FOREST KNOLLS	94933	6.65E-05	6.20E-06	0.001085	0.000169	0.000678		
19611	COUNTY OF MARIN, NICASIO YARD	5600 NICASIO VALLEY RD	NICASIO	94946	0.017406	0.015291	0.144976	0.117756	8.54E-05	0.002678	0.002571
20734	COUNTY OF MARIN, PT REYES FIRE	101 4TH STREET	POINT REYES STA	94956	0.009225	0.000859	0.152672	0.064871	0.000417	0.00027	0.00027
18815	COUNTY OF MARIN, RYAN CREEK PUMP STATION	425 SYCAMORE AVENUE	MILL VALLEY	94941	0.000121	0.000106	0.001058	0.003332	1.59E-06	8.13E-05	7.81E-05
18662	COUNTY OF MARIN, S V #2	403 VENDOLA DRIVE	SAN RAFAEL	94903	0.004164	0.003658	0.012575	0.057841	8.94E-05	0.000826	0.000793
18611	COUNTY OF MARIN, S V #4 PUMP STATION	1565 VENDOLA DRIVE	SAN RAFAEL	94903	0.000881	8.20E-05	0.000137	0.001084	1.81E-07	3.19E-06	3.19E-06
15876	COUNTY OF MARIN, SAN VENETIA #1	609 VENDOLA DRIVE	SAN RAFAEL	94903	0.001831	0.001609	0.00553	0.025437	1.18E-05	0.000363	0.000349
18846	COUNTY OF MARIN, SHORELINE PUMP STATION	215 SHORELINE HIGHWAY	MILL VALLEY	94941	0.006431	0.000599	0.148527	0.088238	2.16E-06	0.000379	0.000379
18732	COUNTY OF MARIN,CARDINAL ROAD PUMP STATION	228 CARDINAL ROAD	MILL VALLEY	94941	0.004115	0.000383	4.87E-05	0.000423	3.22E-06	5.66E-05	5.66E-05
19872	COUNTY OF MARIN, MERA, SAN PEDRO	2099 BAYHILLS DRIVE	SAN RAFAEL	94903	0.001749	0.000163	0.011579	0.00369	0.000285	0.000103	0.000103
18530	COUNTY OF MARIN,S,V, #3 PUMP STATION	NEXT TO 79, VENDOLA DRIVE	SAN RAFAEL	94903	2.31E-05	2.03E-05	6.12E-05	0.000282	4.35E-07	4.02E-06	3.86E-06
111282	COUNTY OF MARIN-HICKS VALLEY FIRE DEPT	7330 RED HILL RD	PETALUMA	94952	0.000564	0.000564					

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
20196	CPFB TENANT LLC/CAVALLO POINT LODGE	602 MURRAY CIR FORT BAKER	SAUSALITO	94965	0.002431	0.002135	0.007292	0.046185	8.95E-05	0.002188	0.0021
17022	CUSTOM BUILT CABINETS	20A PIMENTEL CT #11	NOVATO	94949	0.067693	0.064698					
23260	DELTA BUILDING SERVICES, INC	525 MESA ROAD	BOLINAS	94924	0.003583	0.003147	0.010819	0.049766	2.31E-05	0.000711	0.000682
23261	DELTA BUILDING SERVICES, INC	17000 SIR FRANCIS DRAK BOUL	POINT REYES STA	94956	0.001249	0.001097	0.010315	0.008381	8.71E-06	0.000191	0.000183
109826	DEPARTMENT OF TRANSPORTATION	40 SHORELINE HWY	MILL VALLEY	94941	0.001197	0.001197					
4229	DIANTHA'S COFFEE	91B LOUISE STREET	SAN RAFAEL	94901	0.001271	0.000847	0.006988	0.027998	0.000113	0.011452	0.00803
200293	DIXIE SCHOOL DISTRICT MAINTENANCE YARD	121 MARINWOOD AVE	SAN RAFAEL	94903	0.001248	0.001248					
21739	DRIVESAVERS, INC	400 BEL MARIN KEYS BLVD	NOVATO	94949	0.000746	6.95E-05	4.93E-05	1.46E-05	6.2E-07	1.65E-07	1.65E-07
11036	DUTRA MATERIALS/SAN RAFAEL ROC QUARRY INC	SAN PEDRO RD, MCNEARS QUA	SAN RAFAEL	94901	0.424725	0.35905	0.324483	1.300075	0.005268	19.30941	7.7241
14335	EMPORIO RULLI	26 RICH STREET	GREENBRAE	94904	0.000365	0.000178	0.003306	0.013247	5.37E-05	0.000733	0.000536
15081	EQUATOR COFFEES, LLC	115 JORDAN STREET	SAN RAFAEL	94901	0.013964	0.004998	0.080111	0.207303	0.000818	0.105458	0.07487
101939	EXPRESS - CHEVRON	170 MERRYDALE RD	SAN RAFAEL	94903	0.618984	0.618984					
21744	EXXONMOBIL OIL CORPORATION	1400 SO NOVATO BLVD	NOVATO	94947	0.071385	0.041066	0.075513	0.30255	0.001226	0.006473	0.006473
16219	FAIRCHILD SEMICONDUCTOR CORP C/O WEISS ASSO	4300 REDWOOD HIGHWAY	SAN RAFAEL	94903	0.000338	0.000287					
12481	FEDERAL AVIATION ADMINISTRATION	MT VISION ROAD	INVERNESS	94937	0.00015	0.000132	0.000327	0.002525	2.39E-06	0.000103	9.85E-05
14824	FEDERAL AVIATION ADMINISTRATION	SAUSALITO SAU VR	SAUSALITO	94965	0.000441	4.10E-05	0.007647	0.00325	1.09E-05	1.35E-05	1.35E-05
15949	FERNWOOD	301 TENNESSEE VALLEY RD	MILL VALLEY	94941	0.01505	0.004988	0.100264	0.323306	0.02692	0.030772	0.022759
21788	FIREMAN'S FUND INSURANCE COMPANY	777 SAN MARRIN DR	NOVATO	94998	0.003472	0.001694	0.016731	0.072934	0.0003	0.001919	0.001905
24006	FRONTIER CALIFORNIA INC	911 DIABLO AVENUE	NOVATO	94947	2.68E-07	2.35E-07	1.66E-06	4.64E-06	6E-09	1.16E-07	1.11E-07
16984	GARY MIGALE-PAINTING CONTRACTOR	33 HAMILTON DR, UNIT D	NOVATO	94949	0.048299	0.047715					
23726	GEARY-MARKET INVESTMENT, CO LTD	1000 4TH STREET	SAN RAFAEL	94901	0.024633	0.002293	0.001533	0.00909	1.01E-05	0.000178	0.000178
100311	GHILOTTI BROS	525 JACOBY ST	SAN RAFAEL	94901	0.021714	0.021714					
17592	GLOBAL POWER GROUP INC (TOYS 'R' US) - 5829	600 FRANCISCO BOULEVARD	SAN RAFAEL	94901	0.004655	0.000433	0.000724	0.005726	9.57E-07	1.68E-05	1.68E-05
19521	GOLD COAST PAINTING & FINISHING, INC	26B HAMILTON DRIVE	NOVATO	94949	0.041724	0.03426					
1793	GOLDEN GATE BRIDGE & TRANSIT DISTRICT	1011 ANDERSEN DRIVE	SAN RAFAEL	94901	0.037705	0.035717	0.025777	0.108438	0.000412	0.002205	0.002203
108806	GOLDEN GATE BRIDGE & TRANSPORTATION	1011 ANDERSEN DR	SAN RAFAEL	94901	0.009181	0.009181					
15595	GOLDEN GATE FERRY	101 E SIR FRANCIS DRAK BLVD	LARKSPUR	94939	0.010116	0.008887	0.085989	0.069803	5.55E-05	0.001517	0.001457
18399	GOLDEN GATE NTL RECREATION AREA	659 FORT BAKER STREET	SAUSALITO	94965	0.03548	0.003303	0.016986	0.049938	2.459713	0.00104	0.00104
18400	GOLDEN GATE NTL RECREATION AREA	840 FORT BARRY	SAUSALITO	94965	0.000655	0.000575	0.001666	0.006587	4.97E-06	0.000224	0.000215
21646	GUIDE DOGS FOR THE BLIND INC	350 LOS RANCHITOS ROAD	SAN RAFAEL	94903	0.004689	0.004119	0.028389	0.059376	0.000138	0.003545	0.003403
7456	HEADQUARTERS 23D MARINES	153 MADISON AVENUE	SAN RAFAEL	94903	0.004275	0.004061	0.105406	0.002699	0.000115	0.000176	0.000172
110576	HERC RENTALS	5750 PARADISE DR	CORTE MADERA	94925	0.000988	0.000988					
100290	INDIAN VALLEY GOLF CLUB	3035 NOVATO BLVD	NOVATO	94947	0.002013	0.002013					
17519	JB PIANO COMPANY	540 IRWIN STREET	SAN RAFAEL	94901	0.317683	0.257441					
12851	JERRY THOMPSON & SONS PAINTING INC	3 SIMMS STREET	SAN RAFAEL	94901	0.120814	0.113604	0.000183	0.000735	2.98E-06	1.57E-05	1.57E-05
23660	KAISER FOUNDATION HEALTH PLAN	1650 LOS GAMOS DRIVE	SAN RAFAEL	94903	0.000958	0.000842	0.00663	0.010939	2.09E-05	0.000658	0.000631
3947	KAISER PERMANENTE SAN RAFAEL MEDICAL CENTER	99 MONTECILLO ROAD	SAN RAFAEL	94903	0.009914	0.008658	0.031357	0.135483	0.000104	0.002286	0.002197
20220	KKMI SAUSALITO LLC	420 HARBOR DRIVE	SAUSALITO	94965	1.153368	1.143824					
16107	KLOBAS PAINTING COMPANY	50 TIBURON STREET, #16	SAN RAFAEL	94901	0.09951	0.098306					
20146	KOHL'S DEPARTMENT STORES - STORE 1379	5010 NORTHGATE MALL	SAN RAFAEL	94903	0.00102	0.000896	0.002759	0.012804	0.000005	0.000109	0.000105
111978	KUNST BROS PAINTING	76 BELVEDERE ST	SAN RAFAEL	94901	0.003095	0.003095					
4831	L P MCNEAR BRICK CO INC	MCNEAR POINT	SAN RAFAEL	94901	0.108212	0.047613	0.772864	3.096556	0.012548	4.046263	2.852258
1597	LAS GALLINAS VALLEY SANITARY DISTRICT	300 SMITH RANCH ROAD	SAN RAFAEL	94903	5.277327	1.431184	0.311702	0.82606	0.096685	0.019703	0.019542
5366	LAS GALLINAS VALLEY SANITARY DISTRICT	HAWTHORNE STREET	SAN RAFAEL	94903	0.003137	0.002661					
5367	LAS GALLINAS VALLEY SANITARY DISTRICT	MCPHAILS STREET	SAN RAFAEL	94903	0.007552	0.006406					
5368	LAS GALLINAS VALLEY SANITARY DISTRICT	ADRIAN WAY	SAN RAFAEL	94903	0.002487	0.00211					

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
16875	LAS GALLINAS VALLEY SANITARY DISTRICT	79 VENDOLA DRIVE	SAN RAFAEL	94903	0.000248	0.000218	0.00075	0.003451	1.6E-06	4.93E-05	4.73E-05
16876	LAS GALLINAS VALLEY SANITARY DISTRICT	403 VENDOLA DRIVE	SAN RAFAEL	94903	0.000629	0.000552	0.001898	0.008733	4.05E-06	0.000125	0.00012
19510	LAS GALLINAS VALLEY SANITARY DISTRICT	47 MEADOW DRIVE	SAN RAFAEL	94903	0.000194	0.00017	0.001676	0.003683	7.72E-06	0.000178	0.000171
20503	LAS GALLINAS VALLEY SANITARY DISTRICT	PUMP STA N CIVIC CENTER	SAN RAFAEL	94903	0.000352	0.000309	0.003421	0.006681	1.4E-05	0.000399	0.000383
20504	LAS GALLINAS VALLEY SANITARY DISTRICT	4238 REDWOD HWY FRNTG RD	SAN RAFAEL	94903	0.004868	0.004277	0.084386	0.0925	0.000178	0.004868	0.004674
22740	LAS GALLINAS VALLEY SANITARY DISTRICT	805 DESCANSO WAY, NEXT TO	SAN RAFAEL	94903	0.000235	0.000206	0.001766	0.003886	7.48E-06	0.000197	0.000189
110637	LEXUS OF MARIN ATTN: P TERREL	513 FRANCISCO BLVD E	SAN RAFAEL	94901	0.005104	0.005104					
15210	LUCAS RESIDENCE	60 PARK WAY	SAN ANSELMO	94960	0.001048	0.000921	0.002003	0.021787	1.93E-05	0.000387	0.000371
18350	LUCKY #732	1761 GRANT AVENUE	NOVATO	94947	0.002127	0.000198	0.000152	0.006688	3.8E-06	6.99E-05	6.69E-05
19472	MACERICH	5800 NORTHGATE MALL DR	SAN RAFAEL	94903	7.6E-05	6.68E-05	0.000657	0.001444	3.03E-06	6.99E-05	6.71E-05
16252	MACY'S WEST CORTE MADERA STORE #32 /MACY'S	1400 REDWOOD HIGHWAY	CORTE MADERA	94975	5.1E-05	4.48E-05	0.000138	0.000639	2.5E-07	5.46E-06	5.24E-06
16243	MACY'S WEST STORES, INC	1000 NORTHGATE	SAN RAFAEL	94903	0.002028	0.001782	0.006124	0.028169	1.31E-05	0.002097	0.002013
106390	MAGGIORA & GHILOTTI INC	555 DU BOIS ST	SAN RAFAEL	94901	0.006929	0.006929					
100380	MARCONI CONFERENCE CENTER	18500 STATE HIGHWAY 1	MARSHALL	94940	0.000309	0.000309					
112485	MARIN ACURA	5860 PARADISE DR	CORTE MADERA	94925	0.004639	0.004639					
7762	MARIN APPAREL COMPANY	7049 REDWOOD BLVD	NOVATO	94945	0.002502	0.002122				2.5E-05	2.4E-05
19466	MARIN BIOLOGIC LABORATORIES, INC	378 BEL MARIN KEYS BLVD	NOVATO	94949	0.000318	0.00028	0.001325	0.005322	9.4E-06	0.000201	0.000193
22434	MARIN COFFEE ROASTERS	1551 SO NOVATO BLVD	NOVATO	94945	0.000437	0.000106	0.003259	0.013057	5.29E-05	0.000262	0.000228
20965	MARIN COMMUNITY COLLEGE DISTRICT	835 COLLEGE AVENUE	KENTFIELD	94904	0.00056	0.000492	0.000835	0.007934	1.03E-05	0.000181	0.000174
200923	MARIN COMMUNITY COLLEGE DISTRICT	1800 IGNACIO BLVD	NOVATO	94949	0.000435	0.000382	0.007395	0.024856	3.41E-05	0.000435	0.000418
111522	MARIN COUNTRY CLUB	500 COUNTRY CLUB DR	NOVATO	94949	0.001393	0.001393					
111155	MARIN COUNTY PT REYES FIRE & SHERIFF	401 B STREET	POINT REYES STA	94956	0.002579	0.002579					
20954	MARIN FRENCH CHEESE CO	7500 RED HILL	PETALUMA	94952	0.021477	0.015411	0.051534	0.253516	2.544987	0.008103	0.008097
16931	MARIN FURNITURE CLINIC	68 WOODLAND AVENUE	SAN RAFAEL	94901	0.185468	0.183223					
1713	MARIN GENERAL HOSPITAL	250 BONAIR ROAD	GREENBRAE	94904	0.122613	0.064743	0.281909	1.564234	0.018942	0.047552	0.047344
22800	MARIN IT	366 BEL MARIN KEYS BLVD	NOVATO	94949	0.000221	0.000194	0.001859	0.003636	7.36E-06	0.000227	0.000218
15433	MARIN MUNICIPAL WATER DISTRICT	ROUND HILL RD & SPRING LN	TIBURON	94920	0.006811	0.005983	0.004436	0.041371	4.39E-05	0.000931	0.000894
15455	MARIN MUNICIPAL WATER DISTRICT	IGNACIO PMP STTN, BEHIND #1	NOVATO	94949	0.010681	0.009383	0.006356	0.078982	6.88E-05	0.001921	0.001844
21325	MARIN MUNICIPAL WATER DISTRICT	END OF SKY OAKS RD	FAIRFAX	94930	0.001068	0.000938	0.009367	0.035638	2.8E-05	0.001465	0.001406
21505	MARIN MUNICIPAL WATER DISTRICT	330 SAN GERONIMO, VALLEY D	WOODACRE	94973	0.087656	0.008161	1.450727	0.616425	0.002377	0.00257	0.00257
108408	MARIN MUNICIPAL WATER DISTRICT	49 SKY OAKS RD	FAIRFAX	94930	0.002616	0.002616					
108409	MARIN MUNICIPAL WATER DISTRICT	220 NELLEN AVE	CORTE MADERA	94925	0.103164	0.103164					
2111	MARIN SANITARY SERVICE	565 JACOBY STREET	SAN RAFAEL	94901						14.13294	13.56763
105997	MARIN SANITARY SERVICE	1050 ANDERSEN DR	SAN RAFAEL	94901	0.010782	0.010782					
17474	MARINA VILLAGE PUMP STATION	SAN CLEMENTE DRIVE	CORTE MADERA	94976	0.002332	0.002049	0.007043	0.032395	1.5E-05	0.000463	0.000444
2633	MARK CHEAVACCI CUSTOM CABINETRY & MILLWOR	20B PIMENTEL COURT	NOVATO	94947	0.323743	0.295472					
100991	MAXWELL B DREVER	2900 PARADISE DR	TIBURON	94920	0.000232	0.000232					
111184	MCEVOY RANCH	5935 REDHILL ROAD	PETALUMA	94952	0.000679	0.000679					
108559	MEADOW CLUB	1001 BOLINAS RD	FAIRFAX	94930	0.002476	0.002476					
100659	MORRIS ROOFING	1435 FRANCISCO BLVD E	SAN RAFAEL	94901	0.000825	0.000825					
7831	MOUNT TAMALPAIS CEMETERY AND MORTUARY	2500 5TH AVENUE	SAN RAFAEL	94901	0.00156	0.00074	0.011938	0.022883	4.87E-05	0.000461	0.0004
109688	MOUNT TAMALPAIS STATE PARK	801 PANORAMIC HWY	MILL VALLEY	94941	0.001931	0.001931					
109433	NATIONAL PARK SERVICE/GG NRA	FORT CRONKITE BLDG 1107	SAUSALITO	94965	0.000129	0.000129					
8762	NAVE MOTORS INC	1029 1ST STREET	NOVATO	94947	0.079059	0.069964					
1143	NAVY DOD HOUSING FACILITY NOVATO	BLDG 972 C STREET	NOVATO	94947						2.14E-06	1.5E-06
1430	NAZARETH HOUSE OF SAN RAFAEL	245 NOVA ALBION WAY	SAN RAFAEL	94903	0.000377	0.000331	0.002319	0.007161	1.42E-05	0.000348	0.000334

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
16758	NEW CINGULAR WIRELESS,PCS,LLC DBA AT&T MOBIL	100 MESA ROAD	BOLINAS	94924	3.24E-05	3.02E-06	6.5E-06	2.59E-06	0.000116	0.000126	0.000126
16764	NEW CINGULAR WIRELESS,PCS,LLC DBA AT&T MOBIL	2001 E RIDGECREST BLVD	MILL VALLEY	94941	3.01E-05	2.80E-06	6.03E-06	2.4E-06	0.000108	0.000116	0.000116
201702	NFD - STATION 62	450 ATHERTON AVENUE	NOVATO	94945	0.003994	0.003509	0.010802	0.050127	1.96E-05	0.000428	0.000411
201704	NFD - STATION 64	319 ENFRENTE ROAD	NOVATO	94949	0.004509	0.003961	0.025173	0.101442	0.000206	0.004133	0.003968
100032	NICASIO CORPORATION YARD	5600 NICASIO VALLEY RD	NICASIO	94946	0.003558	0.003558					
21427	NORDSTROM STORE #423	1870 REDWOOD HIGHWAY	CORTE MADERA	94925	6.83E-05	6.00E-05	0.000306	0.001131	2.18E-06	3.84E-05	3.69E-05
19156	NORTH BAY REGIONAL SURGERY CTR	100 ROWLAND WAY	NOVATO	94945	0.000449	0.000394	0.001584	0.008528	1.94E-05	0.00029	0.000279
100530	NORTH MARIN WATER DIST ATTN: ROB CLARK	999 RUSH CREEK PL	NOVATO	94945	0.0037	0.0037					
15800	NORTH MARIN WATER DISTRICT	LANAI STREET & TAHITI	DILLON BEACH	94929	0.001952	0.000182	0.033878	0.014395	5.79E-05	6E-05	6E-05
16966	NORTHERN CALIFORNIA PRESBYTERIAN HOMES & SE	501 VIA CASITAS	GREENBRAE	94904	0.874379	0.081564	0.164867	0.394967	0.005957	0.105535	0.104895
106054	NOVATO BUILDERS SUPPLY	800 SWEETSER AVE	NOVATO	94945	0.001135	0.001135					
13763	NOVATO COMMUNITY HOSPITAL	180 ROWLAND WAY	NOVATO	94945	0.039995	0.025231	0.101169	0.528352	0.001737	0.01203	0.011892
17183	NOVATO FIRE DISTRICT	95 ROWLAND WAY	NOVATO	94945	0.031414	0.027597	0.042467	0.549181	0.000618	0.017791	0.017079
24548	NOVATO FIRE PROTECTION DISTRICT	65 SAN RAMON WAY	NOVATO	94947	0.006869	0.006035	0.018421	8.55E-05	1.41E-05	0.006322	0.006069
109639	NOVATO FIRE PROTECTION DISTRICT	7025 REDWOOD BLVD	NOVATO	94945	0.003746	0.003746					
1275	NOVATO SANITARY DISTRICT	500 DAVIDSON STREET	NOVATO	94947	4.253319	2.426893	0.517882	1.786621	0.422238	0.009771	0.009631
1276	NOVATO SANITARY DISTRICT	445 BEL MARIN KEYS BLVD	NOVATO	94947	2.47E-05	2.17E-05	0.000212	0.000924	4.65E-07	1.02E-05	9.78E-06
1277	NOVATO SANITARY DISTRICT	HWY 37 & NVTO CRK & ATHRT	NOVATO	94945	0.156612	0.117452					
13935	NOVATO SANITARY DISTRICT	3000 TOPAZ DRIVE	NOVATO	94945	0.001406	0.001235	0.004246	0.019531	9.05E-06	0.000279	0.000268
13936	NOVATO SANITARY DISTRICT	590 HAMILTON PKWY	NOVATO	94945	0.001523	0.001338	0.004598	0.021151	9.81E-06	0.000302	0.00029
16854	NOVATO SANITARY DISTRICT	891 BEL MARIN KEYS BLVD	NOVATO	94949	0.000864	0.000759	0.002608	0.011995	5.56E-06	0.000171	0.000164
17070	NOVATO SANITARY DISTRICT	438 BOLLING CIRCLE	NOVATO	94945	9.19E-05	8.07E-05	0.000366	0.001616	1.68E-06	9.29E-05	8.92E-05
3993	NOVATO UNIFIED SCHOOL DISTRICT	819 OLIVE AVENUE	NOVATO	94945	0.018762	0.018762					
19774	NOW & THEN ANTIQUES	23 PAMARON WAY	NOVATO	94945	0.014687	0.012412					
23009	NUGGET MARKET #14	1 BLACKFIELD DRIVE	TIBURON	94920	0.000326	3.03E-05	0.00011	1.65E-05	2.67E-07	5.54E-06	5.54E-06
109815	OLOMPALI STATE HISTORIC PARK	N HIGHWAY 101	NOVATO	94948	0.000194	0.000194					
13479	PACIFIC BELL	VISION ROAD	INVERNESS	94937	0.001758	0.001544	0.005308	0.024413	1.13E-05	0.000349	0.000335
13484	PACIFIC BELL	7 KING STREET	LARKSPUR	94939	0.00437	0.003839	0.036481	0.02963	1.89E-05	0.000674	0.000647
13525	PACIFIC BELL	360 SAN GERONMO VLLY	SAN GERONIMO	94963	0.001589	0.001396	0.004797	0.022066	1.02E-05	0.000315	0.000303
13540	PACIFIC BELL	220 SHAVER STREET	SAN RAFAEL	94901	0.064135	0.056342	0.193673	0.890857	0.000413	0.012723	0.012214
13547	PACIFIC BELL	28 ARENAL AVENUE	STINSON BEACH	94970	0.000335	0.000295	0.002699	0.004875	1.96E-05	9.68E-05	9.29E-05
13553	PACIFIC BELL	165 VALLEY AVENUE	TOMALES	94971	0.001622	0.001425	0.004899	0.022536	1.04E-05	0.000322	0.000309
14814	PACIFIC BELL	300 E BLITHEDALE AVENUE	MILL VALLEY	94941	0.039748	0.034919	0.120032	0.55212	0.000256	0.007885	0.00757
15071	PACIFIC BELL	414 TURNER STREET	SAUSALITO	94965	0.014906	0.013095	0.045012	0.207045	9.6E-05	0.002957	0.002839
15658	PACIFIC BELL/SBC ENVIRONMENTAL	350 ALAMEDA DEL PRDO ST	NOVATO	94949	0.00229	0.002011	0.003209	0.040138	3.67E-05	0.000953	0.000915
3031	PACIFIC GAS AND ELECTRIC COMPANY	1220 ANDERSON DRIVE	SAN RAFAEL	94901	0.281305	0.195439	0.014727	0.116456	1.95E-05	0.000342	0.000342
112464	PEACOCK GAP GOLF & COUNTRY CLUB	333 BISCAYNE DR	SAN RAFAEL	94901	0.000686	0.000686					
18990	PHOENIX AMERICAN INC	2401 KERNER BOULEVARD	SAN RAFAEL	94901	0.0006	0.000527	0.010161	0.011408	2.27E-05	0.000462	0.000443
15422	PINNACLE TOWERS INC	3838 LUCAS VALLEY RD	NICASIO	94946	0.000253	0.000223	0.000766	0.003521	1.63E-06	5.03E-05	4.83E-05
201120	PUMP STATION 13	70 BON AIR CTR	GREENBRAE	94904	0.000519	0.000456	0.002827	0.015606	3.47E-05	0.000471	0.000452
13397	RAFAEL TOWN CENTER	999 5TH AVENUE	SAN RAFAEL	94901	0.035876	0.00334	0.00558	0.044127	7.38E-06	0.00013	0.00013
1179	REDWOOD LANDFILL INC	8950 REDWOOD HWY	NOVATO	94945	5361.78	127.7577	40.68578	12.70533	24.48253	386.5012	97.90715
23831	RESIDENCE OF BOYD FELLOWS	15 SPRING ROAD	KENTFIELD	94904	0.233915	0.021777	0.026637	1.053155	0.000176	0.003116	0.003097
1360	RICH READIMIX CONCRETE, INC	101 RICH STREET	GREENBRAE	94904						2.076934	1.880934
22464	RISK BASED DECISIONS, INC	709 CENTER BOULEVARD	FAIRFAX	94930	0.00369	0.002578					
23101	ROBERT GIACOMINI DAIRY, INC	14700 CALIFORNIA 1	POINT REYES STA	94956	37.298	3.472444	32.91208	2.746216	2.54582	0.819149	0.819149

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
200979	ROSS VALLEY SANITARY DISTRICT	380 BON AIR CTR	GREENBRAE	94904	0.000169	0.000149	0.001477	0.003864	8.38E-06	0.000192	0.000184
22498	ROYAL GROUND	1146 4TH STREET	SAN RAFAEL	94901	0.069855	0.04877	0.380362	0.001443	5.85E-06	0.014037	0.009832
111880	SAFEWAY FUEL CENTER #2828	5700 NAVE DR	NOVATO	94949	0.154746	0.154746					
22850	SAFEWAY INC	110 STRWBRRY VLLG B1	MILL VALLEY	94941	0.001983	0.000185	0.000123	0.000732	8.15E-07	1.43E-05	1.43E-05
23122	SAFEWAY INC	1 CAMINO ALTO	MILL VALLEY	94941	0.004854	0.000452	5.95E-05	1.09E-05	3.89E-06	0.000178	0.000178
23702	SAFEWAY INC	900 DIABLO AVENUE	NOVATO	94947	0.011487	0.001069	0.001787	0.014128	2.36E-06	4.16E-05	4.16E-05
22831	SAFEWAY INC #1723	838 SIR FRANCIS DRAK	SAN ANSELMO	94960	0.00221	0.000206	0.001367	0.000783	1.55E-06	2.72E-05	2.72E-05
23200	SAFEWAY INC #2828	5720 NAVE DRIVE	NOVATO	94949	0.004985	0.000464	0.001089	0.00034	4.13E-06	3.73E-06	3.73E-06
22809	SAFEWAY INC #653	700 B STREET	SAN RAFAEL	94901	0.001127	0.000105	0.000697	0.000399	7.88E-07	1.39E-05	1.39E-05
109689	SAMUEL P. TAYLOR STATE PARK	SIR FRANCIS DRAK BLVD	LAGUNITAS	94938	0.003785	0.003785					
20315	SAN ANSELMO COFFEE ROASTERY	701 SAN ANSELMO AVENUE	SAN ANSELMO	94960	0.000107	2.61E-05	0.0023	0.002762	9.95E-06	3.85E-05	3.77E-05
201342	SAN ANSELMO POLICE DEPARTMENT	525 SAN ANSELMO AVE	SAN ANSELMO	94960	0.000248	0.000218	0.001987	0.004648	9.75E-06	0.000231	0.000221
100409	SAN GERONIMO GOLF COURSE	5800 SIR FRANCIS DRAK BLVD	SAN GERONIMO	94963	0.000516	0.000516					
4094	SAN QUENTIN STATE PRISON	CA STATE PRISON	SAN QUENTIN	94964	0.273925	0.267469	0.022635	0.10442	6.95E-05	0.001728	0.001632
106063	SAN RAFAEL ROCK QUARRY	PT SAN PEDRO ROAD	SAN RAFAEL	94901	0.003778	0.003778					
16384	SAN RAFAEL SANITATION DISTRICT	575 PT SAN PEDRO ROAD	SAN RAFAEL	94901	0.001671	0.001468	0.013796	0.011209	1.16E-05	0.000255	0.000245
16385	SAN RAFAEL SANITATION DISTRICT	301 RIVIERA DRIVE	SAN RAFAEL	94901	0.017432	0.015314	0.14817	0.120279	9.57E-05	0.006973	0.006694
16386	SAN RAFAEL SANITATION DISTRICT	905 PT SAN PEDRO ROAD	SAN RAFAEL	94901	0.006672	0.005862	0.056714	0.046039	3.66E-05	0.002669	0.002562
21219	SAN RAFAEL SANITATION DISTRICT	47 CASTRO AVENUE	SAN RAFAEL	94901	0.000638	0.000561	0.004494	0.018483	9.58E-06	0.000355	0.000341
21247	SAN RAFAEL SANITATION DISTRICT	201 N FRNCSO BLVD EST	SAN RAFAEL	94901	0.004493	0.003947	0.043073	0.128463	6.86E-05	0.003125	0.003
21248	SAN RAFAEL SANITATION DISTRICT	86 WOODLAND AVENUE	SAN RAFAEL	94901	0.001274	0.001119	0.003376	0.015683	6.31E-06	0.001162	0.001115
21249	SAN RAFAEL SANITATION DISTRICT	48 MARINA BOULEVARD	SAN RAFAEL	94901	0.000381	0.000335	0.0066	0.017632	9.08E-06	0.00137	0.001315
201014	SAN RAFAEL SANITATION DISTRICT	MARINA AND PT. SAN PEDRO	SAN RAFAEL	94901	3.89E-05	3.41E-05	0.000808	0.001873	4.27E-06	7.77E-05	7.46E-05
1523	SANITARY DISTRICT #5 OF MARIN COUNTY	2001 PARADISE DRIVE	TIBURON	94920	0.683832	0.488824	0.03686	0.141202	0.00021	0.00355	0.003526
13806	SANITARY DISTRICT #5 OF MARIN COUNTY	2430 MAR EAST STREET	TIBURON	94920	0.013173	0.001226	0.002049	0.016202	2.71E-06	4.77E-05	4.77E-05
13807	SANITARY DISTRICT #5 OF MARIN COUNTY	2190 MAR EAST STREET	TIBURON	94920	0.026346	0.002453	0.004098	0.032405	5.42E-06	9.53E-05	9.53E-05
13809	SANITARY DISTRICT #5 OF MARIN COUNTY	SE CORNER, BEACH, AT TIBURO	TIBURON	94920	0.003777	0.000352	0.000587	0.004645	7.76E-07	1.37E-05	1.37E-05
13810	SANITARY DISTRICT #5 OF MARIN COUNTY	1155 TIBURON BLVD	TIBURON	94920	0.003449	0.000321	0.000536	0.004242	7.09E-07	1.25E-05	1.25E-05
13811	SANITARY DISTRICT #5 OF MARIN COUNTY	3700 PARADISE DRIVE	TIBURON	94920	0.000499	0.000438	0.011835	0.00097	1.24E-05	0.000335	0.000322
23998	SANITARY DISTRICT #5 OF MARIN COUNTY	COVE, RD PUMP STATION	TIBURON	94920	0.000922	8.58E-05	0.000143	0.001134	1.9E-07	3.34E-06	3.34E-06
23999	SANITARY DISTRICT #5 OF MARIN COUNTY	SEAFIRTH, PUMP STATION	TIBURON	94920	0.003161	0.000294	0.000492	0.000583	6.5E-07	1.14E-05	1.14E-05
22207	SANITARY DISTRICT #5 OF MARIN COUNTY (SD#5)	2420 MAR EAST ST, PS#2	TIBURON	94920	0.001607	0.00015	3.07E-05	8.1E-06	1.3E-06	1.32E-05	1.32E-05
13877	SANITARY DISTRICT NO 1 KENTFIELD PUMP STATION	CORTE MADERA CREEK PATHW	KENTFIELD	94904	0.002197	0.00193	0.009339	0.046145	4.04E-05	0.002472	0.002373
15738	SANITARY DISTRICT NO 1, LARKSPUR PUMP STATION	200 DOUGHERTY DRIVE	LARKSPUR	94939	0.00011	9.70E-05	0.000457	0.002098	2.81E-06	4.19E-05	4.02E-05
18067	SANITARY DISTRICT NO 2 OF MARIN COUNTY	5726 SAN CLEMENTE DRIVE	CORTE MADERA	94925	0.002983	0.00262	0.011988	0.099114	0.000113	0.003615	0.003471
22957	SANITARY DISTRICT NO 5 OF MARIN COUNTY	N SIDE-OF MAR WEST ST	TIBURON	94920	5.72E-05	5.02E-05	0.000929	0.000109	1.74E-06	3.99E-06	3.83E-06
17960	SANITARY DISTRICT NUMBER 1 P/S 10 MARIN COUN	101 E SIR FRANCIS DRAK BLVD	LARKSPUR	94939	0.00057	0.000501	0.009379	0.010862	2.16E-05	0.000468	0.000449
14891	SAUSALITO MARIN CITY SANITARY DISTRICT	FOOT OF MAIN STREET	SAUSALITO	94965	0.008901	0.007819	0.073495	0.059712	6.2E-05	0.001361	0.001306
14892	SAUSALITO MARIN CITY SANITARY DISTRICT	BRIDGEWAY & LOCUST ST	SAUSALITO	94965	0.00076	0.000668	0.002297	0.004714	4.9E-06	0.000151	0.000145
14894	SAUSALITO MARIN CITY SANITARY DISTRICT	180 DONAHUE STREET	SAUSALITO	94965	0.000253	0.000223	0.000766	0.003521	1.63E-06	5.03E-05	4.83E-05
2053	SAUSALITO-MARIN CITY SANITARY DISTRICT	#1 FORT BAKER ROAD	SAUSALITO	94965	8.111823	5.801986	0.607262	1.775539	0.23353	0.045588	0.04538
16951	SAUSALITO-MARIN CITY SANITARY DISTRICT	301 GATE FIVE ROAD	SAUSALITO	94965	0.000422	0.000371	0.001276	0.002898	2.72E-06	8.38E-05	8.05E-05
15237	SBC	101 KLEINERT WAY	TIBURON	94920	0.005053	0.004439	0.015259	0.070189	3.25E-05	0.001002	0.000962
21627	SEWAGE AGENCY OF S MARIN/CITY OF MILL VALLEY	655 REDWOOD HWY, FRONTAG	MILL VALLEY	94941	0.002725	0.000254	0.027945	6.64E-05	1.13E-06	1.98E-05	1.98E-05
13425	SEWERAGE AGENCY OF S MARIN/CITY OF MILL VALLE	6000 SHELTER BAY AVENUE	MILL VALLEY	94941	0.000735	6.84E-05	0.000432	7.29E-05	6.07E-07	1.07E-05	1.07E-05
1345	SEWERAGE AGENCY OF SOUTH MARIN	450 SYCAMORE AVENUE	MILL VALLEY	94941	0.577956	0.417569	0.067226	0.308643	0.004029	0.004424	0.004249



FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
14723	SEWERAGE AGENCY OF SOUTHERN MARIN	ALMONTE BLVD & ROSEMONT	MILL VALLEY	94941	0.001114	0.000978	0.003363	0.006904	7.17E-06	0.000221	0.000212
14724	SEWERAGE AGENCY OF SOUTHERN MARIN	CAMINO ALTO AVE & MILLER A	MILL VALLEY	94941	0.000213	0.000187	0.000643	0.002958	1.37E-06	4.22E-05	4.06E-05
14725	SEWERAGE AGENCY OF SOUTHERN MARIN	MILLAND DR & SEMINARY DR	MILL VALLEY	94941	0.001068	0.000939	0.008822	0.007167	7.45E-06	0.000163	0.000157
14726	SEWERAGE AGENCY OF SOUTHERN MARIN	500 TIBURON BLVD	TIBURON	94920	0.000528	0.000464	0.005863	0.005695	1.18E-05	0.000279	0.000268
14727	SEWERAGE AGENCY OF SOUTHERN MARIN	BAYVIEW & TIBURON BLVD	TIBURON	94920	0.001396	0.001226	0.004215	0.01939	8.99E-06	0.000277	0.000266
200600	SEWERAGE AGENCY OF SOUTHERN MARIN	138 LOMITA DR	MILL VALLEY	94941	0.000615	0.000541	0.002924	0.011739	2.4E-05	0.00048	0.000461
24187	SHIMMICK/DANNY'S JOINT VENTURE	5702 CONZELMAN STREET	MILL VALLEY	94941	0.046236	0.040618	0.018692	0.186917	0.00945	0.047051	0.045169
112006	SHINEOLOGY @ SECOND STREET	1515 2ND ST	SAN RAFAEL	94901	0.109391	0.109391					
109946	SKYWALKER PROPERTIES	5858 LUCAS VALLEY RD	NICASIO	94946	0.001834	0.001834					
100467	STINSON BEACH FIRE PROTECTION DIST	3499 HWY 1	STINSON BEACH	94970	0.000552	0.000552					
100736	STONE TREE GOLF CLUB	1410 RENAISSANCE RD	NOVATO	94945	0.001618	0.001618					
111945	STRAWBERRY CHEVRON MINI MART	580 REDWOOD HWY FRONTAG	MILL VALLEY	94941	0.661767	0.661767					
15446	TAMALPAIS COMMUNITY SERVICES DISTRICT	305 BELL LANE	MILL VALLEY	94941	0.00251	0.002205	0.005512	0.040636	5.45E-05	0.001285	0.001233
109257	TAMALPAIS COMMUNITY SERVICES DISTRICT	305 BELL LN	MILL VALLEY	94941	0.001388	0.001388					
19699	TAMALPAIS UNION HIGH SCHOOL DISTRICT (REDWO	395 DOHERTY DRIVE	LARKSPUR	94939	3.33E-05	2.93E-05	0.000289	0.000549	1.09E-06	2.86E-05	2.74E-05
15851	TARGET CORPORATION- STORE T-692	200 VINTAGE WAY	NOVATO	94945	0.003462	0.000322	7.55E-06	1.57E-05	1.4E-06	4.77E-05	4.77E-05
21764	TARGET STORE T2772	125 SHORELINE PARKWAY	SAN RAFAEL	94901	0.004798	0.000447	0.002511	0.000229	3.75E-06	0.00013	0.00013
18860	THE COFFEE ROASTERY	4 BOLINAS ROAD	FAIRFAX	94930	0.000219	0.000113	0.001917	0.002304	8.3E-06	5.19E-05	4.53E-05
10200	THE HOME DEPOT (STORE #0657)	111 SHORELINE PARKWAY	SAN RAFAEL	94901	0.000494	0.000434	0.00357	0.009392	2.02E-05	0.000494	0.000475
22568	THE MARINE MAMMAL CENTER	2000 BUNKER RD FORT CRONK	SAUSALITO	94965	0.000784	0.000689	0.013273	0.014902	2.96E-05	0.000603	0.000579
22066	THE PASHA GROUP	4040 CIVIC CENTER	SAN RAFAEL	94903	4.28E-05	3.76E-05	0.000285	0.001101	2.1E-06	3.14E-05	3.01E-05
22734	TIBURON FIRE PROTECTION DISTRICT	1679 TIBURON BLVD	TIBURON	94920	0.003161	0.002777	0.008548	0.039671	1.55E-05	0.000338	0.000325
18649	TJ BUILT CONSTRUCTION, INC	701 DE LONG AVE, UNIT A	NOVATO	94945	0.014714	0.011771					
18955	TOM & DAVE'S SPECIALTY COFFEES	3095 KERNER BLVD, SUITE A	SAN RAFAEL	94901	0.000886	0.000501	0.004405	0.007725	3.13E-05	0.000627	0.000465
109916	TOMALES BAY ST	PIERCE POINT ROAD	INVERNESS	94937	0.000635	0.000635					
111805	TOMALES FIRE STATION	599 DILLON BCH ROAD	TOMALES	94971	0.000193	0.000193					
109667	TOWN OF FAIRFAX	142 BOLINAS RD	FAIRFAX	94930	0.002907	0.002907					
100684	TOWN OF SAN ANSELMO	550 SAN FRANCISCO BLVD	SAN ANSELMO	94960	0.000455	0.000455					
100558	TOWN OF TIBURON	1175 TIBURON BLVD	TIBURON	94920	0.003058	0.003058					
20839	TWIN CITIES POLICE DEPARTMENT	250 DOHNERTY DRIVE	LARKSPUR	94939	0.190977	0.167773	0.000388	0.00209	4.76E-06	7.77E-05	7.46E-05
8267	US COAST GUARD	HANGAR #2, HAMILTON FIELD	NOVATO	94949						0.000625	0.000438
15329	US COAST GUARD STATION GOLDEN GATE	E FORT BAKER	SAUSALITO	94965	0.00164	0.001441	0.004436	0.010098	8.03E-06	0.000176	0.000169
16466	US TELEPACIFIC COMMUNICATIONS	1009 E STREET	SAN RAFAEL	94901	0.000388	0.000341	0.001171	0.005387	2.5E-06	7.69E-05	7.39E-05
100565	VALENTINE CORPORATION	111 PELICAN WAY	SAN RAFAEL	94901	0.001505	0.001505					
4209	VALLEY MEMORIAL PARK	650 BUGEIA LANE	NOVATO	94945	0.021042	0.0147	0.181625	0.264862	0.121866	0.064944	0.04588
17046	VERIZON WIRELESS	8950 REDWOOD HIGHWAY	SAN RAFAEL	94915	0.000386	0.000339	0.00075	0.0051	5.55E-06	9.41E-05	9.04E-05
20464	VERIZON WIRELESS 'SAN RAFAEL'	1000 ROBERT DOLLAR DR	SAN RAFAEL	94901	0.000728	0.000639	0.001691	0.006096	1.25E-05	0.000304	0.000292
18959	VERIZON WIRELESS (BOLINAS)	100 MESA DRIVE	BOLINAS	94924	0.000817	0.000718	0.005985	0.013731	2.33E-05	0.000774	0.000743
17087	VERIZON WIRELESS (CORTE MADERA)	417 SUMMIT DRIVE	CORTE MADERA	94925	0.004001	0.000372	0.00364	1.17E-05	1.55E-06	4.57E-05	4.57E-05
18742	VERIZON WIRELESS (HAMILTON AFB)	HMLTN AFB DD HSN	NOVATO	94949	0.000199	0.000175	0.000623	0.003789	4.58E-06	0.00015	0.000144
19660	VERIZON WIRELESS (LITTLE MOUNTAIN)	3055 NOVATO BLVD	NOVATO	94947	0.000319	0.00028	0.002642	0.006053	1.14E-05	0.000326	0.000313
19873	VERIZON WIRELESS (MARINWOOD)	1 SAINT VINCENTS DRIVE	SAN RAFAEL	94903	6.42E-05	5.64E-05	0.000838	0.003356	5.44E-06	0.000164	0.000158
17375	VERIZON WIRELESS (NEILS ISLAND)	10300 REDWOOD HWY	NOVATO	94947	0.00075	0.000659	0.001503	0.009901	1.08E-05	0.000183	0.000175
17442	VERIZON WIRELESS (NICASIO)	3431 NICASIO VALLEY RD	NICASIO	94946	0.000719	0.000631	0.003647	0.012593	1.38E-05	0.000682	0.000655
17099	VERIZON WIRELESS (NOVATO)	END OF ROBINHOOD DR	NOVATO	94947	0.002285	0.002007	0.00714	0.043408	5.26E-05	0.001713	0.001645
20191	VERIZON WIRELESS (PARADISE DRIVE)	5768 PARADISE DRIVE	CORTE MADERA	94925	3.45E-05	3.03E-05	4.58E-05	0.001833	2.83E-06	8.98E-05	8.62E-05

FACID	FNAME	FSTREET	FCITY	FZIP	TOGT	ROGT	COT	NOXT	SOXT	PMT	PM10T
18532	VERIZON WIRELESS (PEACOCK GAP)	333 BISCAYNE DRIVE	SAN RAFAEL	94901	0.000771	0.000678	0.005649	0.012961	2.2E-05	0.00073	0.000701
18569	VERIZON WIRELESS (SAN GERONIMO)	1 MOUNTAIN KING ROAD	LAGUNITAS	94938	0.000568	0.000499	0.004707	0.010785	2.04E-05	0.000581	0.000558
17388	VERIZON WIRELESS (SAN RAFAEL)	END OF CHLA VSTA DRIVE	SAN RAFAEL	94901	0.001295	0.001138	0.002597	0.017101	1.86E-05	0.000316	0.000303
15147	VERIZON WIRELESS (SKYWALKER RANCH)	3800 LUCAS VALLEY RD	NICASIO	94946	0.002582	0.002268	0.006982	0.032401	1.26E-05	0.000276	0.000265
20396	VERIZON WIRELESS (TAMALPAIS HOMSTEAD VALLEY)	700 DONAHUE STREET	SAUSALITO	94965	0.000213	0.000187	0.001766	0.004046	7.65E-06	0.000218	0.000209
19290	VERIZON WIRELESS (TOMALES)	28375 SHORELINE HWY	TOMALES	94971	0.000129	0.000114	0.001073	0.002458	4.65E-06	0.000133	0.000127
17096	VERIZON WIRELESS (WALDO TUNNEL)	300 SPENCER AVENUE	SAUSALITO	94965	0.026069	0.002427	0.004055	0.032064	5.36E-06	9.43E-05	9.43E-05
16722	VILLA MARIN HOMEOWNERS ASSOCIATION	100 THORNDALE DRIVE	SAN RAFAEL	94903	0.003515	0.003088	0.010615	0.048827	2.26E-05	0.000697	0.000669
22938	VISUAL CONCEPTS ENTERTAINMENT	850 HANGAR AVENUE	NOVATO	94949	0.035621	0.031293	0.065965	0.6768	0.000971	0.011874	0.011399
13757	W BRADLEY ELECTRIC INC	90 HILL ROAD	NOVATO	94945	0.000849	0.000746	0.002297	0.010658	4.16E-06	9.09E-05	8.73E-05
1443	WEILAND INDUSTRIES, INC	34 DELUCA PLACE, BLDG K	SAN RAFAEL	94901						0.000579	0.000405
20322	WILD CARD ROASTERS LLC	40 LOUISE STREET	SAN RAFAEL	94901	0.002358	0.000759	0.016283	0.034218	0.000124	0.002288	0.001798
108069	WOODLANDS GAS & MART	1 KENT AVE	KENTFIELD	94904	0.936115	0.936115					
3235	ZAPPETINI, INC	1112 2ND STREET	SAN RAFAEL	94901	0.045002	0.045002					

**Sheet 1: Marin County Housing and Safety Element EIR Projections**

	<b>HSEU 2019</b>	<b>CAP 2020 Projection</b>	<b>CAP 2030 Projection</b>	<b>CAP 2040 Projection</b>	<b>HSEU 2040</b>	<b>GP Change</b>
Population	66,888	71,660	73,490	75,190	90,170	23,282
Households	29,818	27,960	28,500	28,425	40,811	10,993
Jobs	19,817	20,690	21,315	21,645	18,208	-1,609
Jobs: Agriculture and Natural Resource	335	335	330	325	273	-62
Service Population	86,705	92,350	94,805	96,835	108,379	21,674

**Notes:**

HSEU Population, household, and jobs developed by MIG, Inc.

Agricultural jobs for HSEU obtained from County 2030 CAP; 2040 HSEU assumed agricultural jobs would scale linearly with ag jobs

**Sheet 2: Greenhouse Gas Emissions Summary**

**Table 1: Comparison of 2019 to 2040 GHG Emissions by Sector (Unmitigated)**

Sector	GHG Emissions (MTCO2e)		
	2019 (Existing)	2040 Forecast (Unmitigated)	Difference
Built Environment - Electricity	25,697	3,079	-22,618
Built Environment - Natural Gas	94,939	110,157	15,218
Transportation	255,601	228,898	-26,703
Off-road Vehicles and Equipment	4,263	3,730	-534
Waste	18,421	23,026	4,605
Water	111	139	28
Wastewater	1,813	2,443	631
Agriculture	121,645	99,277	-22,368
Total	522,490	470,749	-51,741
MTCO2e per capita	7.8	5.2	-2.6
Mobile MTCO2e per Capita	3.8	2.5	-1.3

**Table 2: Comparison of 2019 to 2040 GHG Emissions by Sector (Mitigated)**

Sector	GHG Emissions (MTCO2e)		
	2019 (Existing)	2040 Forecast (Mitigated)	Difference
Built Environment - Electricity	25,697	3,079	-22,618
Built Environment - Natural Gas	94,939	93,178	-1,760
Transportation	255,601	228,898	-26,703
Off-road Vehicles and Equipment	4,263	3,730	-534
Waste	18,421	23,026	4,605
Water	111	139	28
Wastewater	1,813	2,443	631
Agriculture	121,645	99,277	-22,368
Total	522,490	453,770	-68,719
MTCO2e per capita	7.8	5.0	-2.8
Mobile MTCO2e per Capita	3.8	2.5	-1.3

Sheet 3: 2019 EIR Inventory GHG Emissions (Existing Conditions)

Table 1: Activity Rates for Existing Land Uses (2019 Inventory)

Emissions / Energy Source	Scaling Metric	Energy Activity Rate	GHG Emissions Rate	Emissions Rate Notes	Source
Residential Electricity (kW)	Per Household	6,601.60	7.80686E-05	MTCO2e per kW. See Sheet 6.	2030 CAP
Non-residential Electricity (kW)	Per Job	6,676.67			2030 CAP
Residential Natural Gas (Therm)	Per Household	445.46	0.00531865	MTCO2e per Therm	2030 CAP
Non-residential Natural Gas (Therm)	Per Job	205.77			2030 CAP
Residential Stationary Combustion (Gallons of Propane)	Per Household	6.90	0.005645293	MTCO2e per gal propane	2030 CAP
Transportation	Per VMT	See Sheet 7.	0.00040446	Derived from EMFAC	EMFAC
Off-road (Gallons of Gasoline)	Per Service Population	3.029602401	0.0089125	MTCO2e per Gal Gasoline	2030 CAP
Off-road (Gallons of Diesel)	Per Service Population	1.50454585	0.01029514	MTCO2e per Gal Diesel	2030 CAP
Wastewater	Per Population	N/A	0.03	MTCO2e per Pop	2030 CAP
Waste	Per Service Population	N/A	0.21	MTCO2e per SP	2030 CAP
Water	Per Service Population	N/A	0.00	MTCO2e per SP	2030 CAP
Agriculture (Land management / Ag Job)	Per Agricultural Job	N/A	363.1186944	MTCO2e per Ag Job	2030 CAP
Agriculture (Gallons of Gasoline / Ag Job)	Per Agricultural Job	89.76557864	0.0089125	MTCO2e per Ag Job	2030 CAP
Agriulture (Gallons of Diesel / Ag job)	Per Agricultural Job	90.17804154	0.01029514	MTCO2e per Ag Job	2030 CAP

Table 2: 2019 Inventory Energy and GHG Emissions Estimation

Emissions / Energy Source	Energy	GHG Emissions (MTCO2e)
Residential Electricity (kW)	196,846,525.84	15,367.53
Non-residential Electricity (kW)	132,311,547.85	10,329.38
Residential Natural Gas (Therm)	13,282,687.57	70,645.97
Non-residential Natural Gas (Therm)	4,077,741.92	21,688.08
Residential Stationary Combustion (Gal of Propane)	461,409.19	2,604.79
Transportation	Calc Sep	255,601.12
Off-road Gasoline (Gallons)	262,681.68	2,341.15
Off-road Diesel (Gallons)	130,451.65	1,343.02
Wastewater	--	1,812.56
Waste	--	18,421.23
Water	--	111.27
Agriculture (Land management / Ag Job)	--	121,644.76
Agriculture (Gal of Gasoline)	30,071.47	268.01
Agriulture (Gal of Diesel)	30,209.64	311.01
	Total	522,489.88
	GHG per Capita	7.8

**Table 3: Sum of Energy and Emissions by Sector**

Sector	Energy	GHG Emissions (MTCO2e)
Built Environment - Electricity	329,158,073.69	25,697
Built Environment - Natural Gas	17,360,429.49	94,939
Transportation	See Sheet 7.	255,601
Off-road Vehicles and Equipment	453,414.44	4,263
Waste	--	18,421
Water	--	111
Wastewater	--	1,813
Agriculture	--	121,645
Total	--	522,490
	GHG per Capita	7.8
	Mobile Source per Capita	3.8

Sheet 4: Unmitigated 2040 EIR Forecast GHG Emissions

Table 1: Activity Rates for New Development (2040 Forecast; Unmitigated)

Emissions / Energy Source	Scaling Metric	Energy Activity Rate	GHG Emissions Rate (MTCO2e)	Emissions Rate Notes	Source
Residential Electricity (kW)	Per Household	951.00		MTCO2e per kW. Assumes PG&E meets 60% RPS target, improves upon it's 2019 renewable mix. See Sheet 6.	CAP pg B-55
Non-residential Electricity (kW)	Per Job	2,301.10	9.36286E-06		CAP pg B-56
Residential Natural Gas (Therm)	Per Household	290.39	0.00531865	MTCO2e per therm	CAP pg B-55
Non-residential Natural Gas (Therm)	Per Job	88.58			CAP pg B-56
Residential Stationary Combusion (Gallons of Propane)	Per Household	6.90	0.005645293	MTCO2e per gal propane	2030 CAP; Held Constant
Transportation	Per VMT	See Sheet 7.	0.000271502	Derived from EMFAC	EMFAC
Off-road (Gallons of Gasoline)	Per Service Population	2.12	0.0089125	MTCO2e per Gal Gasoline	CAP pg B-17; removes portable landscape equipment CARB SORE
Off-road (Gallons of Diesel)	Per Service Population	1.50	0.01029514	MTCO2e per Gal Diesel	2030 CAP; Held Constant
Wastewater	Per Population	N/A	0.03	MTCO2e per Pop	2030 CAP; Held Constant
Waste	Per Service Population	N/A	0.21	MTCO2e per SP	2030 CAP; Held Constant
Water	Per Service Population	N/A	0.00	MTCO2e per SP	2030 CAP; Held Constant
Agriculture (Land management / Ag Job)	Per Agricultural Job	N/A	363.1186944	MTCO2e per Ag Job	2030 CAP; Held Constant
Agriculture (Gallons of Gasoline / Ag Job)	Per Agricultural Job	89.77	0.0089125	MTCO2e per Ag Job	2030 CAP; Held Constant
Agriulture (Gallons of Diesel / Ag job)	Per Agricultural Job	90.18	0.01029514	MTCO2e per Ag Job	2030 CAP; Held Constant

Table 2: Energy and GHG Emissions Estimation (2040 Forecast; Unmitigated)

Emissions / Energy Source	2019 Energy	2040 Incremental Growth Energy	Sum of Energy	2019 LU Emissions (MTCO2e)	2040 Incremental Growth GHG Emissions	Sum of GHG Emissions (MTCO2e)
Residential Electricity (kW)	196,846,525.84	10,454,343.00	207,300,868.84	1,843.05	97.88	1,940.93
Non-residential Electricity (kW)	132,311,547.85	(10,739,711.35)	121,571,836.51	1,238.81	(100.55)	1,138.26
Residential Natural Gas (Therm)	13,282,687.57	3,192,280.98	16,474,968.55	70,645.97	16,978.63	87,624.59
Non-residential Natural Gas (Therm)	4,077,741.92	(330,989.79)	3,746,752.13	21,688.08	(1,760.42)	19,927.66
Residential Stationary Combusion (Gal of Propane)	461,409.19	-	-	2,604.79	-	2,604.79
Transportation	See Sheet 7.			228,898		228,897.97
Off-road Gasoline (Gallons)	-	-	229,514.71	2,046		2,045.55
Off-road Diesel (Gallons)	-	-	163,060.98	1,679		1,678.74
Wastewater	-	-	-	2,443		2,443.47
Waste	-	-	-	23,026		23,026.03
Water	-	-	-	139		139.08
Agriculture (Land management / Ag Job)	-	-	-	99,277		99,276.74
Agriculture (Gal of Gasoline)			24,541.93	2		2.44
Agriulture (Gal of Diesel)			24,654.70	3		2.81
	Total					470,749.06
	GHG per Capita					5.2

Note: Assumes existing (2019) land uses will continue to consume electricity and natural gas in the same quantities in 2040 as 2019.

**Table 3: Sum of Energy and Emissions by Sector (2040 Forecast; Unmitigated)**

Sector	Energy	GHG Emissions (MTCO2e)
Built Environment - Electricity (kW)	328,872,705.34	3,079
Built Environment - Natural Gas (Therm)	20,221,720.68	110,157
Transportation	See Sheet 7.	228,898
Off-road Vehicles and Equipment	441,772.32	3,730
Waste	--	23,026
Water	--	139
Wastewater	--	2,443
Agriculture	--	99,277
Total	--	470,749
	MTCO2e per Capita	5.2
	Mobile MTCO2e per Capita	2.5



Sheet 5: Mitigated 2040 EIR Forecast GHG Emissions

Table 1: Activity Rates for New Development (2040 Forecast; Mitigated)

Emissions / Energy Source	Scaling Metric	Energy Activity Rate	GHG Emissions Rate (MTCO2e)	Emissions Rate Notes	Source
Residential Electricity (kW)	Per Household	951.00		MTCO2e per kW. Assumes PG&E meets 60% RPS target, improves upon it's 2019 renewable mix. See Sheet 6.	CAP pg B-55
Non-residential Electricity (kW)	Per Job	2,301.10	9.36286E-06		CAP pg B-56
Residential Natural Gas (Therm)	Per Household	0.00	0.00531865	MTCO2e per therm	CAP pg B-55
Non-residential Natural Gas (Therm)	Per Job	88.58			CAP pg B-56
Residential Stationary Combusion (Gallons of Propane)	Per Household	6.90	0.005645293	MTCO2e per gal propane	2030 CAP; Held Constant
Transportation	Per VMT	See Sheet 7.	0.000271502	Derived from EMFAC	EMFAC
Off-road (Gallons of Gasoline)	Per Service Population	2.12	0.0089125	MTCO2e per Gal Gasoline	CAP pg B-17; removes portable landscape equipment CARB SORE
Off-road (Gallons of Diesel)	Per Service Population	1.50	0.01029514	MTCO2e per Gal Diesel	2030 CAP; Held Constant
Wastewater	Per Population	N/A	0.03	MTCO2e per Pop	2030 CAP; Held Constant
Waste	Per Service Population	N/A	0.21	MTCO2e per SP	2030 CAP; Held Constant
Water	Per Service Population	N/A	0.00	MTCO2e per SP	2030 CAP; Held Constant
Agriculture (Land management / Ag Job)	Per Agricultural Job	N/A	363.1186944	MTCO2e per Ag Job	2030 CAP; Held Constant
Agriculture (Gallons of Gasoline / Ag Job)	Per Agricultural Job	89.77	0.0089125	MTCO2e per Ag Job	2030 CAP; Held Constant
Agriulture (Gallons of Diesel / Ag job)	Per Agricultural Job	90.18	0.01029514	MTCO2e per Ag Job	2030 CAP; Held Constant

Table 2: Energy and GHG Emissions Estimation (2040 Forecast; Mitigated)

Emissions / Energy Source	2019 Energy	2040 Incremental Growth Energy	Sum of Energy	2019 LU Emissions (MTCO2e)	2040 Incremental Growth GHG Emissions	Sum of GHG Emissions (MTCO2e)
Residential Electricity (kW)	196,846,526	10,454,343	207,300,869	1,843	98	1,941
Non-residential Electricity (kW)	132,311,548	-10,739,711	121,571,837	1,239	-101	1,138
Residential Natural Gas (Therm)	13,282,688	0	13,282,688	70,646	0	70,646
Non-residential Natural Gas (Therm)	4,077,742	-330,990	3,746,752	21,688	-1,760	19,928
Residential Stationary Combusion (Gal of Propane)	461,409	0	0	2,605	0	2,605
Transportation	See Sheet 7.			228,898		228,898
Off-road Gasoline (Gallons)	0	0	229,515	2,046		2,046
Off-road Diesel (Gallons)	0	0	163,061	1,679		1,679
Wastewater	0	0	0	2,443		2,443
Waste	0	0	0	23,026		23,026
Water	0	0	0	139		139
Agriculture (Land management / Ag Job)	0	0	0	99,277		99,277
Agriculture (Gal of Gasoline)			24,542	2		2
Agriulture (Gal of Diesel)			24,655	3		3
	Total					453,770.44
	GHG per Capita					5.0

Note: Assumes existing (2019) land uses will continue to consume electricity and natural gas in the same quantities in 2040 as 2019.

**Table 3: Sum of Energy and Emissions by Sector (2040 Forecast; Mitigated)**

Sector	Energy	GHG Emissions (MTCO2e)
Built Environment - Electricity (kW)	328,872,705.34	3,079
Built Environment - Natural Gas (Therm)	17,029,439.70	93,178
Transportation	See Sheet 7.	228,898
Off-road Vehicles and Equipment	441,772.32	3,730
Waste	--	23,026
Water	--	139
Wastewater	--	2,443
Agriculture	--	99,277
Total	--	453,770
	MTCO2e per Capita	5.0
	Mobile MTCO2e per Capita	2.5

Sheet 6: EIR Greenhouse Gas Intensity Factors for Consumed Electricity

Table 1: Electricity Emissions Factors, 2019

Supplier	MT / kWh			
	CO2	CH4	N2O	CO2e
PG&E	0.00000122	0.00000001	0.00000000	0.00000212
MCE	0.00008846	0.00000001	0.00000000	0.00008936
Direct Access	--	--	--	0.0002101
Weighted	--	--	--	7.80686E-05

Notes: PG&E had a renewable mix of 31.7% in 2019 per the PG&E 2021 Corporate Sustainability Report

Table 2: Electricity Emissions Factors, 2040

Supplier	MT / kWh			
	CO2	CH4	N2O	CO2e
PG&E	7.11935E-07	0.00000001	0.00000000	1.61E-06
MCE	--	--	--	0.00000000
Direct Access	--	--	--	0.00012987
Weighted	--	--	--	9.36E-06

Weighted average is based on 2018 electricity load distribution as follows:

PG&E	23%
MCE	71%
Other Direct Access	7%

Sheet 7: Energy and Mobile Source Consumption Comparison Tables

Table 1: Estimated Operational Change in Vehicle Fuel Consumption (2019 vs. 2040)

Metric	VMT and Vehicle Fuel Consumption - Kittleson				
	2019	2040 NP	2040 HEU	Change 2019 and 2040 HEU	Change 2040 NP and 2040 HEU
Total Diesel VMT	82,983	57,469	75,401	-7,582	17,931
Total Gasoline VMT	1,686,929	1,575,906	2,067,618	380,689	491,713
Total Electric VMT	51,287	218,448	286,608	235,321	68,160
Total VMT (miles/day)	1,821,199	1,851,823	2,429,627	608,428	577,804
Diesel Fuel Efficiency (miles/gal)	10.19	10.58	10.58	0.39	0
Gasoline Fuel Efficiency (miles/gal)	22.64	30.83	30.83	8.20	0
Electric Fuel Efficiency (miles per kWh)	2.68	2.12	2.12	-0.56	0
Total Diesel Consumption (Gallons/yr)	2,825,813	1,885,124	2,473,319	-352,494	588,195
Total Gasoline Consumption (Gallons/yr)	25,859,547	17,736,058	23,270,045	-2,589,502	5,533,987
Total Electricity Consumption (kWh/yr)	6,647,137	35,728,934	46,877,041	40,229,903	11,148,107
Total Petroleum Consumption (Gallons/yr)	28,685,360	19,621,182	25,743,364	-2,941,996	6,122,182
Service Population (SP)	86,705	86,705	108,379	21,674	21,674
Fuel Consumption Efficiency (Gallons/yr/SP)	330.84	226.30	237.53	-93.31	11.23

Table 2: Greenhouse Gas Global Warming Potentials (5 AR)

Pollutant	CO2	CH4	N2O
Greenhouse Gas	1	28	265

Table 3: GHG Emissions per VMT

Year	GHG per VMT			
	CO2	CH4	N2O	CO2e
Short tons				
2019	4.39E-04	2.72E-08	2.43E-08	4.46E-04
2040	2.96E-04	9.08E-09	1.28E-08	2.99E-04
Metric Tons				
2019	0.000397934	2.47138E-08	2.20147E-08	0.00040446
2040	0.000268204	8.23854E-09	1.15762E-08	0.00027150

Table 4: Electricity Consumption

Metric	MWh		
	2019 Existing	2040 Project	Change
Residential Electricity Consumption	196,847	207,301	10,454
Non-Residential Electricity Consumption	132,312	121,572	-10,740
Total Electricity	329,158	328,873	-285
Service Population	86,705	108,379	21,674
MWh/SP	3.80	3.03	-0.76

**Table 5: Natural Gas Consumption**

Metric	Thousand therms		
	2019 Existing	2040 Project	Change
Residential Natural Gas Consumption	13,283	13,282,688	13,269,405
Non-Residential Natural Gas Consumption	4,078	3,746,752	3,742,674
Total Natural Gas	17,360	17,029,440	17,012,079
Service Population	86,705	108,379	21,674
Therm/SP	0.20	157.13	156.93

Sheet 8: 2030 CAP Forecasts

FORECAST

Plan Bay Area Projections 2040

	2015	2018	2020	2030	2040	2050
Population	70,795	71,314	71,660	73,490	75,190	72,502
Countywide Population	262,420	264,493	265,875	274,530	282,670	272,566
Households	27,615	27,822	27,960	28,500	28,425	27,409
Countywide Households	106,790	107,633	108,195	111,065	111,585	107,597
Jobs	20,560	20,638	20,690	21,315	21,645	20,871
Jobs: Agriculture and Natural Resource	340	337	335	330	325	313
Countywide Jobs	129,565	129,766	129,900	133,480	134,960	130,136
Household Population	64,600	65,041	65,335	66,870	68,265	65,825
Household Size	2.37	2.37	2.37	2.38	2.44	2.40

Note: 2018 data is interpolated

<http://projections.planbayarea.org/>

Plan Bay Area only forecast to 2040. For 2050 estimates, the 2040-2050 Marin County population growth from the CA Department of Finance, Table P-1: State Population Projections (2010-2060), baseline 2019, is applied to unincorporated population, households, and jobs.

Marin County Annual VMT Forecasts for 2020, MTC

	Passenger VMT	Commercial VMT	Bus VMT*	Total VMT
2018	288,941,452	13,297,860	1,754,911	303,994,223
2020	289,803,640	12,888,703	1,767,976	304,460,318
Years compounded				3
Compound Annual Growth Rate 2017-2020				0.05%
Percent change 2018 to 2020				0.15%

\* 2020 bus VMT assumes same VMT as in 2019

Marin County Annual VMT Forecasts for 2030, MTC

	Passenger VMT	Commercial VMT	Bus VMT*	Total VMT
2018	288,941,452	13,297,860	1,754,911	303,994,223
2030	303,994,722	13,125,127	1,767,976	318,887,825
Years compounded				12
Compound Annual Growth Rate				0.40%
Percent change 2018 to 2030				4.90%

\* 2030 bus VMT assumes same VMT as in 2019

Marin County Annual VMT Forecasts for 2040, MTC

	Passenger VMT	Commercial VMT	Bus VMT*	Total VMT
2018	288,941,452	13,297,860	1,754,911	303,994,223
2040	297,511,437	13,696,843	1,767,976	312,976,255
Years compounded				22
Compound Annual Growth Rate				0.13%
Percent change 2018 to 2040				2.68%

\* 2040 bus VMT assumes same VMT as in 2019

**Emission Factors, 2020**

PG&E electricity	0.0000945 MTCO <sub>2</sub> e/kWh
MCE electricity <sup>1</sup>	0.0000253 MTCO <sub>2</sub> e/kWh
DA electricity	0.0002101 MTCO <sub>2</sub> e/kWh
Electricity, weighted average <sup>2</sup>	0.0000537 MTCO <sub>2</sub> e/kWh
Residential electricity, weighted average <sup>3</sup>	0.0000437 MTCO <sub>2</sub> e/kWh
Natural Gas	0.0053187 MTCO <sub>2</sub> e/therm
Gasoline/off-road	0.0089125 MTCO <sub>2</sub> /gallon
Diesel/off-road	0.0102951 MTCO <sub>2</sub> /gallon
Transportation coefficient	0.0003658 MTCO <sub>2</sub> e/mile
Passenger vehicle coefficient	0.0003268 MTCO <sub>2</sub> e/mile
Commercial vehicle coefficient	0.0011212 MTCO <sub>2</sub> e/mile
Bus coefficient	0.0012512 MTCO <sub>2</sub> e/mile

<sup>1</sup>The MCE 2019 Resource Integration Plan states that MCE electricity is projected to be 94% GHG-free in 2020 and 100% GHG-free by 2022. We have conservatively estimated a future GHG emission factor by assuming the remainder will be system power using the current emission factor set by CARB of 929.5 lbs CO<sub>2</sub>/MWh (eGrid 2018).

<sup>2</sup>Weighted average is based on 2018 electricity load distribution as follows:

PG&E	22.53%
MCE	70.54%
Other Direct Access	6.93%

<sup>3</sup> Residential weighted average is based on 2018 load distribution as follows:

PG&E	26.6%
MCE	73.4%

**Emission Factors, 2030**

PG&E electricity	0.0000927 MTCO <sub>2</sub> e/kWh
MCE electricity	0.0000000 MTCO <sub>2</sub> e/kWh
DA electricity	0.0001299 MTCO <sub>2</sub> e/kWh
Electricity, weighted average	0.0000299 MTCO <sub>2</sub> e/kWh
Residential electricity, weighted average	0.0000247 MTCO <sub>2</sub> e/kWh
Natural Gas	0.0053187 MTCO <sub>2</sub> e/therm
Gasoline/off-road	0.0089125 MTCO <sub>2</sub> /gallon
Diesel/off-road	0.0102951 MTCO <sub>2</sub> /gallon
Transportation coefficient	0.0002916 MTCO <sub>2</sub> e/mile
Passenger vehicle coefficient	0.0002577 MTCO <sub>2</sub> e/mile
Commercial vehicle coefficient	0.0009485 MTCO <sub>2</sub> e/mile
Bus coefficient	0.0012512 MTCO <sub>2</sub> e/mile





REFERENCE SHEET

*Emission Factors 2018*

Source	Unit	Emission Factor	Source
PG&E electricity	MTCO <sub>2</sub> e/kWh	0.0000945	PG&E & eGrid
MCE electricity (light green)	MTCO <sub>2</sub> e/kWh	0.0000585	MCE & eGrid
MCE electricity (light & deep green)	MTCO <sub>2</sub> e/kWh	0.0000481	GHG Inventory
Other direct access electricity	MTCO <sub>2</sub> e/kWh	0.0002261	eGrid 2018 Summary Tables for WECC California
Residential electricity (weighted average)	MTCO <sub>2</sub> e/kWh	0.0000605	2018 GHG Inventory
Commercial electricity (weighted average)	MTCO <sub>2</sub> e/kWh	0.0000848	2018 GHG Inventory
Electricity (weighted average)	MTCO <sub>2</sub> e/kWh	0.0000709	2018 GHG Inventory
Electricity grid loss factor		1.0480000	eGrid 2018 Summary Tables for WECC California
Natural gas	MTCO <sub>2</sub> e/therm	0.0053187	2010 LGOP, Tables G.1 and G.3
Gasoline	MTCO <sub>2</sub> e/gallon	0.0089125	LGOP, May 2010, Version 1.1, Tables G.11 and G.14
Diesel	MTCO <sub>2</sub> e/gallon	0.0102951	LGOP, May 2010, Version 1.1, Tables G.11 and G.14
Rail diesel	MTCO <sub>2</sub> e/gallon	0.0102100	CO2 emission factors from U.S. Community Protocol v. 1.1 Table TR.1.6. CH4 and N2O emission factors from LGOP Table G.1:
Renewable diesel	MTCO <sub>2</sub> e/gallon	0.0041860	NEXGEN Fuel <a href="http://www.nexgenfuel.com/fleets-commercial-use/">http://www.nexgenfuel.com/fleets-commercial-use/</a>
Transportation coefficient	MTCO <sub>2</sub> e/mile	0.0003863	Calculation
Passenger car coefficient	MTCO <sub>2</sub> e/mile	0.0003459	EMFAC 2017
Commercial vehicle coefficient	MTCO <sub>2</sub> e/mile	0.0011483	EMFAC 2017
Bus coefficient	MTCO <sub>2</sub> e/mile	0.0012512	Calculation
Landfilled waste coefficient	MTCO <sub>2</sub> e/ton	0.2844639	GHG Inventory
ADC waste coefficient	MTCO <sub>2</sub> e/ton	0.0707196	GHG Inventory
Water coefficient - all sources	MTCO <sub>2</sub> e/MG	0.0471753	GHG Inventory
Wastewater treatment coefficient	MTCO <sub>2</sub> e/person	0.0142074	GHG Inventory

*Unincorporated Statistics*

	2018	2020	2030	2040	2050	Source
Population	71,314	71,660	73,490	75,190	72,502	ABAG
Households	27,822	27,960	28,500	28,425	27,409	ABAG
Jobs	20,638	20,690	21,315	21,645	20,871	ABAG
Service Population (population + employees)	91,952	92,350	94,805	96,835	93,374	Calculation
Area in the County - square miles land area	828.0	828.0	828.0	828.0	828.0	Wikipedia
Density (ppl. per sq. mile)	86	87	89	91	88	Calculation
Average Household Size	2.37	2.37	2.38	2.44	2.40	ABAG

*Community-Wide GHG Emissions*

	2018 MTCO <sub>2</sub> e	2020 BAU MTCO <sub>2</sub> e	2030 BAU MTCO <sub>2</sub> e	2040 BAU MTCO <sub>2</sub> e	2050 BAU MTCO <sub>2</sub> e	Source
Residential	79,802	80,198	81,747	81,532	78,617	2018 Greenhouse Gas Inventory
Commercial	34,321	34,407	35,447	35,996	34,709	
Transportation	117,767	117,263	122,444	120,857	116,538	
Off-Road	4,471	4,506	4,593	4,580	4,417	
Wastewater	1,933	1,941	1,993	2,036	1,963	
Waste	19,536	19,621	20,142	20,573	19,838	
Water	118	119	122	124	120	
Agriculture	122,371	121,645	119,829	118,014	113,795	
TOTAL	380,319	379,699	386,316	383,712	369,997	
Emissions per service population	4.14	4.11	4.07	3.96		
Emissions per resident	5.33	5.30	5.26	5.10		Calculation
Emissions per household	13.67	13.58	13.55	13.50		Calculation
Residential emissions per household	2.87	2.87	2.87	2.87		Calculation
Commercial emissions per job	1.66	1.66	1.66	1.66		Calculation

Energy Detail	2018	2018 MTCO <sub>2</sub> e	2020 BAU	2020 BAU MTCO <sub>2</sub> e	2030 BAU	2030 BAU MTCO <sub>2</sub> e
Residential electricity (kWh) inc. grid loss	183,669,731	11,108	184,580,752	11,163	188,145,616	11,379
Residential natural gas (therms)	12,393,552	65,917	12,455,025	66,244	12,695,573	67,523
Residential stationary combustion (gallons propane)	491,914	2,777	494,354	2,791	503,902	2,845
Commercial electricity (kWh) inc. grid loss	137,793,093	6,651	138,140,280	6,668	142,313,198	6,869
Commercial natural gas (therms)	4,246,679	22,587	4,257,379	22,644	4,385,985	23,328
Total residential and commercial electricity (kWh)	321,462,824	17,759	322,721,032	17,831	330,458,814	18,248
Total community natural gas use (therms)	16,640,231	88,504	16,712,404	88,887	17,081,558	90,851
Average household electricity use (kWh)	6,602	0.4	6,602	0.6	6,602	0.4
Average household natural gas use (therms)	445	2.4	445	2.4	445	2.4

Transportation Detail	2018	2018 MTCO <sub>2</sub> e	2020 BAU	2020 BAU MTCO <sub>2</sub> e	2030 BAU	2030 BAU MTCO <sub>2</sub> e
Passenger Vehicles (VMT)	288,941,452	99,953	289,803,640	100,251	303,994,722	105,160
Commercial Vehicles (VMT)	13,297,860	15,270	12,888,703	14,800	13,125,127	15,071
Bus (VMT)	1,754,911	2,196	1,767,976	2,212	1,767,976	2,212
SMART Train		348		403		403
Off-Road Gasoline - Construction & Landscape (gallons)	278,578	2,483	279,960	2,495	286,782	2,556
Off-Road Diesel - Construction & Landscape (gallons)	138,346	1,424	139,032	1,431	142,420	1,466

Waste Detail	2018 (tons)	2018 MTCO <sub>2</sub> e	2020 BAU (tons)	2020 BAU MTCO <sub>2</sub> e	2030 BAU (tons)	2030 BAU MTCO <sub>2</sub> e
Landfilled Waste	65,987	18,771	66,273	18,852	68,034	19,353
Landfilled Sludge (subset of above)	308		310		318	
ADC	10,817	765	10,864	768	11,153	789
Total	76,804	19,536	77,136	19,620	79,187	20,142

Wastewater Detail	2018	2018 MTCO <sub>2</sub> e	2020 BAU	2020 BAU MTCO <sub>2</sub> e	2030 BAU	2030 BAU MTCO <sub>2</sub> e
Process emissions	n/a	876	n/a	880	n/a	903
Electricity use	n/a	137	n/a	138	n/a	141
Septic system emissions	n/a	919	n/a	919	n/a	919

Water Detail	2018	2018 MTCO <sub>2</sub> e	2020 BAU	2020 BAU MTCO <sub>2</sub> e	2030 BAU	2030 BAU MTCO <sub>2</sub> e
Water use (million gallons)	2,501	118	2,512	119	2,579	122

Agriculture Detail	2018	2018 MTCO <sub>2</sub> e	2020 BAU	2020 BAU MTCO <sub>2</sub> e	2030 BAU	2030 BAU MTCO <sub>2</sub> e
Manure Management	n/a	53,068	n/a	52,753	n/a	51,966
Enteric Fermentation	n/a	68,896	n/a	68,487	n/a	67,465
Fertilizer Application	n/a	407	n/a	405	n/a	399
Off-road vehicles & equipment - diesel (gallons)	30,390	313	30,210	311	29,759	306
Off-road vehicles & equipment - gasoline (gallons)	30,251	270	30,071	268	29,623	264

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*Government Operations GHG Emissions*

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Buildings & Facilities Energy Detail		MTCO <sub>2</sub> e
Total electricity (kWh)	13,649,989	#REF!
Total natural gas (therms)	379,454	2,018.2

Public Lighting Energy Detail	kWh	MTCO <sub>2</sub> e
Streetlights	380,758	0.0
Streetlights - Parks & Open Space	8,209	0.0
Traffic Control Signals	41,321	0.0
Total electricity (kWh)	430,288	0.0

Vehicle Fleet Detail		MTCO <sub>2</sub> e
All departments (gallons diesel)	125,404	1,291.1
All departments (gallons gasoline)	255,707	2,279.0

Global Warming Potential:

AR5, 100 year

CO <sub>2</sub>	1
CH <sub>4</sub>	28
N <sub>2</sub> O	265

1 and G.14.

Sheet 10: Average Fuel Efficiency - Marin County  
 EMFAC2021 Marin County Fuel Efficiency Estimates for 2019 and 2040

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Gallons Per Day	Miles Per Gallon
HHDT	3.61	101.76	33.20	3.07
LDA	115,795.76	3,698,617.54	134,093.22	27.58
LDT1	14,779.56	429,679.11	18,349.74	23.42
LDT2	57,459.81	1,987,532.83	89,784.66	22.14
LHDT1	4,330.11	147,853.77	16,810.12	8.80
LHDT2	539.31	18,355.13	2,337.66	7.85
MCY	6,591.51	36,613.98	920.95	39.76
MDV	28,181.72	911,683.20	50,279.91	18.13
MH	564.54	4,601.48	1,046.43	4.40
MHDT	473.69	20,658.44	4,648.10	4.44
OBUS	147.25	8,022.47	1,721.21	4.66
SBUS	60.80	3,025.43	325.62	9.29
UBUS	53.50	5,590.74	917.96	6.09
TOTAL	228,981.16	7,272,335.87	321,268.79	22.64

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Gallons Per Day	Miles Per Gallon
HHDT	766.73	81060.66	15093.62	5.37
LDA	1145.96	34303.40	828.35	41.41
LDT1	12.36	126.49	5.25	24.12
LDT2	419.65	15835.19	529.21	29.92
LHDT1	2557.93	90026.31	5741.89	15.68
LHDT2	794.12	30576.65	2409.79	12.69
MCY	0.00	0.00	0.00	0.00
MDV	869.09	32239.62	1391.07	23.18
MH	242.19	2563.37	272.78	9.40
MHDT	1529.33	59065.98	7346.33	8.04
OBUS	44.02	3132.04	468.92	6.68
SBUS	101.69	2328.73	293.76	7.93
UBUS	53.50	6481.42	725.81	8.93
TOTAL	8536.57	357739.84	35106.79	10.19

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Energy Consumption (kWh/day)	Miles Per kWh
HHDT	0.00	0.00	0.00	0.00
LDA	7,157.39	215,908.22	80,825.25	2.67
LDT1	40.83	1,130.30	436.10	2.59
LDT2	100.47	2,349.97	772.99	3.04
LHDT1	0.00	0.00	0.00	0.00
LHDT2	0.00	0.00	0.00	0.00
MCY	0.00	0.00	0.00	0.00
MDV	86.35	1,686.43	509.72	3.31
MH	0.00	0.00	0.00	0.00
MHDT	0.00	0.00	0.00	0.00
OBUS	0.00	0.00	0.00	0.00
SBUS	0.00	0.00	0.00	0.00
UBUS	1.01	21.42	37.35	0.57
TOTAL	7,386.05	221,096.34	82,581.40	2.68

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Gallons Per Day	Miles Per Gallon
HHDT	0.27	31.98	6.87	4.66
LDA	104,780.43	3,426,225.96	92,692.90	36.96
LDT1	8,232.45	250,776.55	7,989.88	31.39
LDT2	63,879.74	2,088,893.47	68,335.39	30.57
LHDT1	3,201.58	107,753.86	9,759.70	11.04
LHDT2	372.13	12,335.80	1,256.34	9.82
MCY	6,288.13	33,128.30	772.21	42.90
MDV	36,289.56	1,155,972.57	45,830.53	25.22
MH	336.35	3,574.97	808.29	4.42
MHDT	213.62	9,735.84	1,818.04	5.36
OBUS	63.96	1,941.71	366.53	5.30
SBUS	42.44	2,152.50	204.77	10.51
UBUS	33.83	2,940.77	291.15	10.10
TOTAL	223,734.49	7,095,464.27	230,132.61	30.83

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Gallons Per Day	Miles Per Gallon
HHDT	825.37	82766.22	11805.71	7.01
LDA	121.07	2816.78	55.08	51.14
LDT1	0.08	2.68	0.09	29.85
LDT2	265.55	8374.93	214.41	39.06
LHDT1	2067.84	69190.61	4173.33	16.58
LHDT2	960.74	31605.18	2229.46	14.18
MCY	0.00	0.00	0.00	0.00
MDV	484.62	14143.17	480.48	29.44
MH	250.22	2223.47	237.95	9.34
MHDT	1141.27	42365.29	4621.37	9.17
OBUS	49.51	3242.15	430.86	7.52
SBUS	71.83	1516.25	172.58	8.79
UBUS	5.23	506.62	38.93	13.01
TOTAL	6243.34	258753.33	24460.26	10.58

Vehicle Class	Population	Vehicle Miles Travelled Per Day	Energy Consumption (kWh/day)	Miles Per kWh
HHDT	229.97	17,739.52	32,951.12	0.54
LDA	18,122.62	626,430.62	233,835.68	2.68
LDT1	319.82	10,458.48	3,783.59	2.76
LDT2	3,592.31	90,491.16	32,295.71	2.80
LHDT1	2,053.73	96,173.32	63,013.95	1.53
LHDT2	512.47	23,170.76	14,941.00	1.55
MCY	0.00	0.00	0.00	0.00
MDV	2,868.99	73,100.63	26,620.31	2.75
MH	0.00	0.00	0.00	0.00
MHDT	700.76	34,339.85	37,591.98	0.91
OBUS	18.84	1,325.15	1,468.06	0.90
SBUS	40.81	1,308.60	1,378.55	0.95
UBUS	71.96	9,016.29	15,717.59	0.57
TOTAL	28,532.29	983,554.37	463,597.54	2.12

Sheet 11: Raw EMFAC2021 Output for 2019 - Marin County

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: County

Region: Marin

Calendar Year: 2019

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Consumption	NOx_RUNE	NOx_IDLEX	NOx_STRE	NOx_TOTE	PM2.5_RUI	PM2.5_IDL	PM2.5_STR	PM2.5_TO
Marin	2019	HHDT	Aggregate	Aggregate	Gasoline	3.608755	101.7573	101.7573	0	72.20398	0	0.002746	0	1.43E-05	0.00276	1.15E-06	0	4.76E-07	1.63E-06
Marin	2019	HHDT	Aggregate	Aggregate	Diesel	766.7314	81060.66	81060.66	0	9467.818	0	0.472624	0.053584	0.018209	0.544417	0.007465	0.000144	0	0.007609
Marin	2019	HHDT	Aggregate	Aggregate	Natural Gas	62.53211	4531.263	4531.263	0	419.0193	0	0.0116	0.000821	0	0.012421	1.55E-05	7.1E-07	0	1.62E-05
Marin	2019	LDA	Aggregate	Aggregate	Gasoline	114176.8	3663281	3663281	0	528732.6	0	0.362762	0	0.211202	0.573964	0.005778	0	0.001402	0.00718
Marin	2019	LDA	Aggregate	Aggregate	Diesel	1145.964	34303.4	34303.4	0	5133.511	0	0.011925	0	0	0.011925	0.000846	0	0	0.000846
Marin	2019	LDA	Aggregate	Aggregate	Electricity	5538.385	185770.7	0	185770.7	28093.59	71722.82006	0	0	0	0	0	0	0	0
Marin	2019	LDA	Aggregate	Aggregate	Plug-in Hyb	1619.002	65474.53	35337.01	30137.52	6694.572	9102.430275	0.000248	0	0.000865	0.001113	6.19E-05	0	1.91E-05	8.11E-05
Marin	2019	LDT1	Aggregate	Aggregate	Gasoline	14779.38	429675	429675	0	65292.84	0	0.108885	0	0.040342	0.149226	0.001103	0	0.000278	0.001382
Marin	2019	LDT1	Aggregate	Aggregate	Diesel	12.36271	126.4891	126.4891	0	38.66985	0	0.000231	0	0	0.000231	3.36E-05	0	0	3.36E-05
Marin	2019	LDT1	Aggregate	Aggregate	Electricity	40.65499	1126.844	0	1126.844	194.2634	435.0546719	0	0	0	0	0	0	0	0
Marin	2019	LDT1	Aggregate	Aggregate	Plug-in Hyb	0.177749	7.535852	4.083464	3.452388	0.734992	1.042723932	2.87E-08	0	9.5E-08	1.24E-07	8.17E-09	0	2.45E-09	1.06E-08
Marin	2019	LDT2	Aggregate	Aggregate	Gasoline	57383.44	1985721	1985721	0	270681	0	0.254049	0	0.14217	0.396219	0.003104	0	0.000671	0.003775
Marin	2019	LDT2	Aggregate	Aggregate	Diesel	419.6518	15835.19	15835.19	0	2050.235	0	0.001058	0	0	0.001058	8.73E-05	0	0	8.73E-05
Marin	2019	LDT2	Aggregate	Aggregate	Electricity	24.11044	752.2193	0	752.2193	119.1531	290.4187382	0	0	0	0	0	0	0	0
Marin	2019	LDT2	Aggregate	Aggregate	Plug-in Hyb	76.36368	3409.891	1812.14	1597.751	315.7638	482.5685492	1.27E-05	0	4.08E-05	5.35E-05	3.59E-06	0	1.05E-06	4.64E-06
Marin	2019	LHDT1	Aggregate	Aggregate	Gasoline	4330.111	147853.8	147853.8	0	64512.2	0	0.056091	0.000196	0.051711	0.107998	0.000347	0	3.7E-05	0.000384
Marin	2019	LHDT1	Aggregate	Aggregate	Diesel	2557.927	90026.31	90026.31	0	32175.5	0	0.308653	0.006968	0	0.31562	0.005911	8.09E-05	0	0.005991
Marin	2019	LHDT2	Aggregate	Aggregate	Gasoline	539.3061	18355.13	18355.13	0	8034.858	0	0.006691	2.45E-05	0.006364	0.01308	3.63E-05	0	3.31E-06	3.96E-05
Marin	2019	LHDT2	Aggregate	Aggregate	Diesel	794.1212	30576.65	30576.65	0	9989.045	0	0.070186	0.002108	0	0.072294	0.001488	2.38E-05	0	0.001512
Marin	2019	MCY	Aggregate	Aggregate	Gasoline	6591.511	36613.98	36613.98	0	13183.02	0	0.028964	0	0.002757	0.031722	8E-05	0	7E-05	0.00015
Marin	2019	MDV	Aggregate	Aggregate	Gasoline	28181.72	911683.2	911683.2	0	130452.3	0	0.20345	0	0.096088	0.299539	0.001542	0	0.000378	0.00192
Marin	2019	MDV	Aggregate	Aggregate	Diesel	869.0858	32239.62	32239.62	0	4239.355	0	0.002707	0	0	0.002707	0.000221	0	0	0.000221
Marin	2019	MDV	Aggregate	Aggregate	Electricity	0.191017	4.343293	0	4.343293	0.841689	1.676869425	0	0	0	0	0	0	0	0
Marin	2019	MDV	Aggregate	Aggregate	Plug-in Hyb	86.15501	3658.735	1976.644	1682.091	356.251	508.0416516	1.39E-05	0	4.6E-05	5.99E-05	3.97E-06	0	1.19E-06	5.17E-06
Marin	2019	MH	Aggregate	Aggregate	Gasoline	564.544	4601.476	4601.476	0	56.47698	0	0.004108	0	2.42E-05	0.004132	1.4E-05	0	5.76E-08	1.41E-05
Marin	2019	MH	Aggregate	Aggregate	Diesel	242.1874	2563.366	2563.366	0	24.21874	0	0.011924	0	0	0.011924	0.000298	0	0	0.000298
Marin	2019	MHDT	Aggregate	Aggregate	Gasoline	473.6899	20658.44	20658.44	0	9477.588	0	0.027467	4.55E-05	0.005158	0.032671	4.18E-05	0	1.22E-05	5.39E-05
Marin	2019	MHDT	Aggregate	Aggregate	Diesel	1529.334	59065.98	59065.98	0	16942.73	0	0.329301	0.05193	0.013987	0.395218	0.008971	0.000385	0	0.009356
Marin	2019	MHDT	Aggregate	Aggregate	Natural Gas	12.73429	669.9389	669.9389	0	109.5569	0	0.000122	9.52E-05	0	0.000217	7.61E-07	2.33E-07	0	9.95E-07
Marin	2019	OBUS	Aggregate	Aggregate	Gasoline	147.2468	8022.468	8022.468	0	2946.115	0	0.004844	1.06E-05	0.001366	0.006221	7.5E-06	0	1.13E-06	8.63E-06
Marin	2019	OBUS	Aggregate	Aggregate	Diesel	44.0202	3132.037	3132.037	0	542.4141	0	0.021425	0.001388	0.000512	0.023325	0.000731	9.21E-06	0	0.00074
Marin	2019	OBUS	Aggregate	Aggregate	Natural Gas	0.016043	1.18401	1.18401	0	0.142781	0	3.93E-07	2.8E-08	0	4.21E-07	6.98E-10	4.96E-11	0	7.48E-10
Marin	2019	SBUS	Aggregate	Aggregate	Gasoline	60.80401	3025.432	3025.432	0	243.216	0	0.006309	5.92E-05	0.000172	0.00654	1.88E-05	0	7.96E-07	1.96E-05
Marin	2019	SBUS	Aggregate	Aggregate	Diesel	101.6908	2328.729	2328.729	0	1472.482	0	0.016474	0.003403	0.000478	0.020356	8.72E-05	4.09E-06	0	9.13E-05

Marin	2019 SBUS	Aggregate	Aggregate	Natural Gas	2.836836	72.68698	72.68698	0	41.07738	0	4.91E-05	1.65E-05	0	6.56E-05	2.71E-07	3.42E-08	0	3.05E-07
Marin	2019 UBUS	Aggregate	Aggregate	Gasoline	53.49562	5590.742	5590.742	0	213.9825	0	0.000859	0	0.000184	0.001043	4.78E-06	0	6.56E-08	4.85E-06
Marin	2019 UBUS	Aggregate	Aggregate	Diesel	53.49562	6481.416	6481.416	0	213.9825	0	0.010059	0	0	0.010059	4.54E-05	0	0	4.54E-05
Marin	2019 UBUS	Aggregate	Aggregate	Electricity	1.009351	21.4248	0	21.4248	4.037406	37.34864797	0	0	0	0	0	0	0	0

PM2.5_PM	PM2.5_PM	PM2.5_TO	PM10_RUN	PM10_IDLE	PM10_STR	PM10_TOT	PM10_PM	PM10_PMI	PM10_TOT	CO2_RUNE	CO2_IDLEX	CO2_STRE	CO2_TOTE	CH4_RUNE	CH4_IDLEX	CH4_STRE	CH4_TOTE	N2O_RUNE	N2O_IDLEX	N2O_STRE
5.61E-07	4.58E-06	6.78E-06	1.23E-06	0	5.02E-07	1.73E-06	2.24E-06	1.31E-05	1.71E-05	0.30606	0	0.008457	0.314517	7.87E-05	0	0	7.87E-05	6.23E-05	0	2.95E-07
0.000784	0.002821	0.011214	0.007802	0.000151	0	0.007953	0.003135	0.00806	0.019148	160.6254	8.492129	0	169.1176	0.000598	0.000166	0	0.000764	0.025284	0.001337	0
4.5E-05	0.00029	0.000351	1.68E-05	7.72E-07	0	1.76E-05	0.00018	0.000828	0.001026	7.836186	0.584669	0	8.420855	0.02064	0.002029	0	0.02267	0.001597	0.000119	0
0.008076	0.009631	0.024887	0.006283	0	0.001524	0.007808	0.032305	0.027517	0.06763	1213.632	0	45.88066	1259.513	0.018606	0	0.059763	0.07837	0.030032	0	0.022288
7.56E-05	9E-05	0.001012	0.000884	0	0	0.000884	0.000303	0.000257	0.001444	9.281328	0	0	9.281328	6.2E-05	0	0	6.2E-05	0.001461	0	0
0.00041	0.000313	0.000722	0	0	0	0	0.001638	0.000893	0.002531	0	0	0	0	0	0	0	0	0	0	0
0.000144	9.31E-05	0.000318	6.74E-05	0	2.08E-05	8.82E-05	0.000577	0.000266	0.000931	10.39041	0	0.5078	10.89821	3.22E-05	0	0.000319	0.000351	4.46E-05	0	0.000155
0.000947	0.001363	0.003692	0.0012	0	0.000303	0.001502	0.003789	0.003893	0.009185	166.755	0	7.09075	173.8457	0.005022	0	0.011398	0.01642	0.007048	0	0.003321
2.79E-07	4.63E-07	3.43E-05	3.51E-05	0	0	3.51E-05	1.12E-06	1.32E-06	3.76E-05	0.058769	0	0	0.058769	2.06E-06	0	0	2.06E-06	9.25E-06	0	0
2.48E-06	1.91E-06	4.4E-06	0	0	0	0	9.94E-06	5.46E-06	1.54E-05	0	0	0	0	0	0	0	0	0	0	0
1.66E-08	1.07E-08	3.79E-08	8.88E-09	0	2.67E-09	1.15E-08	6.65E-08	3.06E-08	1.09E-07	0.001201	0	6.38E-05	0.001265	3.75E-09	0	3.52E-08	3.9E-08	5.21E-09	0	1.73E-08
0.004378	0.006016	0.014168	0.003375	0	0.00073	0.004105	0.017511	0.017188	0.038804	820.9744	0	29.09158	850.0659	0.009132	0	0.032067	0.041198	0.018296	0	0.013289
3.49E-05	4.69E-05	0.000169	9.12E-05	0	0	9.12E-05	0.00014	0.000134	0.000365	5.929597	0	0	5.929597	1.06E-05	0	0	1.06E-05	0.000933	0	0
1.66E-06	1.27E-06	2.92E-06	0	0	0	0	6.63E-06	3.62E-06	1.03E-05	0	0	0	0	0	0	0	0	0	0	0
7.52E-06	4.85E-06	1.7E-05	3.91E-06	0	1.14E-06	5.04E-06	3.01E-05	1.38E-05	4.9E-05	0.532936	0	0.028787	0.561723	1.67E-06	0	1.52E-05	1.69E-05	2.33E-06	0	7.47E-06
0.000326	0.004449	0.005159	0.000377	0	4.01E-05	0.000417	0.001304	0.012713	0.014433	156.8403	0.590169	1.830096	159.2605	0.002728	0.000583	0.003005	0.006316	0.003039	1.44E-05	0.003808
0.000298	0.002709	0.008998	0.006178	8.46E-05	0	0.006262	0.001191	0.00774	0.015194	63.94112	0.394342	0	64.33546	0.001225	1.44E-05	0	0.001239	0.010065	6.21E-05	0
4.05E-05	0.000644	0.000725	3.95E-05	0	3.59E-06	4.31E-05	0.000162	0.001841	0.002046	21.82687	0.084936	0.235366	22.14717	0.000275	7.39E-05	0.000354	0.000703	0.000365	1.83E-06	0.000472
0.000101	0.001074	0.002686	0.001555	2.49E-05	0	0.00158	0.000404	0.003067	0.005052	26.80687	0.193805	0	27.00068	0.000325	4.46E-06	0	0.00033	0.00422	3.05E-05	0
4.04E-05	0.00017	0.00036	8.49E-05	0	7.38E-05	0.000159	0.000161	0.000484	0.000804	7.884409	0	0.84079	8.725199	0.008405	0	0.003333	0.011738	0.001848	0	0.000156
0.00201	0.002853	0.006783	0.001675	0	0.00041	0.002085	0.00804	0.008152	0.018278	459.1619	0	17.19437	476.3562	0.007285	0	0.021297	0.028582	0.012722	0	0.007479
7.11E-05	9.55E-05	0.000387	0.000231	0	0	0.000231	0.000284	0.000273	0.000788	15.58634	0	0	15.58634	2.1E-05	0	0	2.1E-05	0.002453	0	0
9.58E-09	7.4E-09	1.7E-08	0	0	0	0	3.83E-08	2.11E-08	5.94E-08	0	0	0	0	0	0	0	0	0	0	0
8.07E-06	5.19E-06	1.84E-05	4.32E-06	0	1.3E-06	5.62E-06	3.23E-05	1.48E-05	5.27E-05	0.581265	0	0.040434	0.621699	1.81E-06	0	1.71E-05	1.89E-05	2.52E-06	0	8.36E-06
1.52E-05	7.99E-05	0.000109	1.52E-05	0	6.17E-08	1.52E-05	6.09E-05	0.000228	0.000304	9.91179	0	0.002226	9.914016	0.000207	0	3.05E-06	0.00021	0.000209	0	2.26E-06
1.13E-05	4.43E-05	0.000354	0.000312	0	0	0.000312	4.52E-05	0.000127	0.000483	3.056438	0	0	3.056438	1.54E-05	0	0	1.54E-05	0.000481	0	0
6.83E-05	0.000359	0.000481	4.52E-05	0	1.3E-05	5.83E-05	0.000273	0.001025	0.001357	43.18574	0.290212	0.560553	44.0365	0.001041	0.000121	0.000649	0.001811	0.001149	3.04E-06	0.000317
0.000195	0.001035	0.010587	0.009377	0.000402	0	0.009779	0.000781	0.002958	0.013518	78.02479	4.287667	0	82.31246	0.000854	6.12E-05	0	0.000915	0.012282	0.000675	0
2.22E-06	1.18E-05	1.5E-05	8.28E-07	2.54E-07	0	1.08E-06	8.86E-06	3.38E-05	4.37E-05	0.752126	0.077033	0	0.829158	0.000546	0.000265	0	0.000812	0.000153	1.57E-05	0
2.65E-05	0.000139	0.000174	8.14E-06	0	1.21E-06	9.35E-06	0.000106	0.000396	0.000512	16.13713	0.062596	0.107194	16.30692	0.000142	3.24E-05	0.000129	0.000303	0.000237	8.86E-07	0.000105
1.04E-05	7.41E-05	0.000824	0.000764	9.63E-06	0	0.000773	4.14E-05	0.000212	0.001026	5.097907	0.15612	0	5.254027	8.23E-05	4.05E-06	0	8.64E-05	0.000802	2.46E-05	0
3.92E-09	2.11E-08	2.57E-08	7.59E-10	5.4E-11	0	8.13E-10	1.57E-08	6.02E-08	7.67E-08	0.001347	2.04E-05	0	0.001368	9.52E-07	8.49E-08	0	1.04E-06	2.75E-07	4.15E-09	0
6.67E-06	5.24E-05	7.87E-05	2.03E-05	0	8.56E-07	2.11E-05	2.67E-05	0.00015	0.000198	2.889482	0.177989	0.017502	3.084973	0.000449	0.000143	2.66E-05	0.000618	0.000264	4.44E-06	1.27E-05
7.7E-06	4.04E-05	0.000139	9.11E-05	4.27E-06	0	9.54E-05	3.08E-05	0.000115	0.000242	3.030712	0.260736	0	3.291448	9.57E-06	9.31E-07	0	1.05E-05	0.000477	4.1E-05	0





N2O_TOTE	ROG_RUNE	ROG_IDLEX	ROG_STRE	ROG_TOTE	ROG_DIUR	ROG_HOTS	ROG_RUNL	ROG_TOTA	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_TOTE	TOG_DIUR	TOG_HOTS	TOG_RUNL	TOG_TOTA	CO_RUNEX	CO_IDLEX	CO_STREX	CO_TOTEX
6.26E-05	0.000647	0	0	0.000647	4.54E-05	2.28E-05	0.000122	0.000837	0.000781	0	0	0.000781	4.54E-05	2.28E-05	0.000122	0.000971	0.014815	0	0.000563	0.015378
0.026621	0.012874	0.003575	0	0.016449	0	0	0	0.016449	0.014656	0.00407	0	0.018726	0	0	0	0.018726	0.04683	0.039003	0	0.085833
0.001717	0.000598	3.72E-05	0	0.000635	0	0	0	0.000635	0.021411	0.00208	0	0.023491	0	0	0	0.023491	0.097717	0.005004	0	0.102721
0.05232	0.081214	0	0.303568	0.384782	0.215615	0.071806	0.178483	0.850686	0.118302	0	0.332363	0.450665	0.215615	0.071806	0.178483	0.916569	4.31727	0	2.867444	7.184714
0.001461	0.001335	0	0	0.001335	0	0	0	0.001335	0.00152	0	0	0.00152	0	0	0	0.00152	0.013984	0	0	0.013984
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.0002	0.000102	0	0.001304	0.001406	0.000834	0.000281	0.000257	0.002778	0.00015	0	0.001427	0.001577	0.000834	0.000281	0.000257	0.002949	0.015515	0	0.010171	0.025685
0.010369	0.023586	0	0.063888	0.087474	0.057205	0.017427	0.051678	0.213784	0.034302	0	0.069947	0.104249	0.057205	0.017427	0.051678	0.230559	0.99268	0	0.634548	1.627228
9.25E-06	4.44E-05	0	0	4.44E-05	0	0	0	4.44E-05	5.05E-05	0	0	5.05E-05	0	0	0	5.05E-05	0.00027	0	0	0.00027
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.25E-08	1.18E-08	0	1.43E-07	1.55E-07	8.81E-08	2.58E-08	2.67E-08	2.96E-07	1.73E-08	0	1.57E-07	1.74E-07	8.81E-08	2.58E-08	2.67E-08	3.15E-07	1.79E-06	0	1.12E-06	2.91E-06
0.031586	0.038859	0	0.158769	0.197628	0.084992	0.028076	0.067999	0.378696	0.056384	0	0.173827	0.230211	0.084992	0.028076	0.067999	0.411279	2.294051	0	1.495802	3.789853
0.000933	0.000229	0	0	0.000229	0	0	0	0.000229	0.000261	0	0	0.000261	0	0	0	0.000261	0.002191	0	0	0.002191
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9.8E-06	5.26E-06	0	6.15E-05	6.67E-05	3.27E-05	1.03E-05	1.03E-05	0.00012	7.67E-06	0	6.73E-05	7.5E-05	3.27E-05	1.03E-05	1.03E-05	0.000128	0.000796	0	0.00048	0.001276
0.006862	0.01434	0.002241	0.015761	0.032342	0.014989	0.004573	0.023034	0.074939	0.020542	0.003268	0.017251	0.041061	0.014989	0.004573	0.023034	0.083657	0.309542	0.017824	0.219696	0.547061
0.010127	0.026376	0.000309	0	0.026685	0	0	0	0.026685	0.030027	0.000352	0	0.03038	0	0	0	0.03038	0.079165	0.002565	0	0.08173
0.00084	0.001361	0.000281	0.001812	0.003454	0.001653	0.0005	0.002533	0.00814	0.001986	0.00041	0.001984	0.00438	0.001653	0.0005	0.002533	0.009066	0.030676	0.002224	0.027763	0.060662
0.00425	0.007002	9.61E-05	0	0.007098	0	0	0	0.007098	0.007971	0.000109	0	0.008081	0	0	0	0.008081	0.019092	0.000796	0	0.019889
0.002003	0.059124	0	0.02566	0.084784	0.029631	0.051989	0.054189	0.220593	0.069145	0	0.027875	0.09702	0.029631	0.051989	0.054189	0.232829	0.688185	0	0.124647	0.812832
0.020201	0.035404	0	0.115549	0.150953	0.053664	0.0177	0.044447	0.266764	0.049638	0	0.126493	0.176131	0.053664	0.0177	0.044447	0.291942	1.49232	0	0.863174	2.355494
0.002453	0.000453	0	0	0.000453	0	0	0	0.000453	0.000516	0	0	0.000516	0	0	0	0.000516	0.006892	0	0	0.006892
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.09E-05	5.73E-06	0	6.94E-05	7.51E-05	3.91E-05	1.19E-05	1.23E-05	0.000138	8.37E-06	0	7.6E-05	8.43E-05	3.91E-05	1.19E-05	1.23E-05	0.000148	0.000868	0	0.000541	0.001409
0.000211	0.001172	0	1.62E-05	0.001188	0.003367	0.001227	2.35E-05	0.005805	0.001564	0	1.77E-05	0.001582	0.003367	0.001227	2.35E-05	0.006199	0.033766	0	0.00026	0.034026
0.000481	0.000331	0	0	0.000331	0	0	0	0.000331	0.000377	0	0	0.000377	0	0	0	0.000377	0.00112	0	0	0.00112
0.001469	0.005814	0.000521	0.004152	0.010487	0.002043	0.000741	0.004886	0.018157	0.008202	0.000755	0.004536	0.013494	0.002043	0.000741	0.004886	0.021164	0.131006	0.007763	0.075986	0.214755
0.012957	0.018387	0.001317	0	0.019704	0	0	0	0.019704	0.020932	0.001499	0	0.022431	0	0	0	0.022431	0.050886	0.014511	0	0.065397
0.000169	7.8E-06	3.79E-06	0	1.16E-05	0	0	0	1.16E-05	0.000557	0.000271	0	0.000828	0	0	0	0.000828	0.002205	0.000437	0	0.002642
0.000343	0.000713	0.000121	0.000698	0.001532	0.000271	9.64E-05	0.000325	0.002225	0.001012	0.000177	0.000763	0.001952	0.000271	9.64E-05	0.000325	0.002644	0.01644	0.000938	0.013056	0.030434
0.000827	0.001772	8.71E-05	0	0.001859	0	0	0	0.001859	0.002018	9.92E-05	0	0.002117	0	0	0	0.002117	0.004614	0.000772	0	0.005386
2.79E-07	1.36E-08	1.21E-09	0	1.48E-08	0	0	0	1.48E-08	9.72E-07	8.67E-08	0	1.06E-06	0	0	0	1.06E-06	4.04E-06	8.64E-08	0	4.12E-06
0.000281	0.00278	0.000676	0.000178	0.003634	0.000376	0.000158	0.000379	0.004546	0.003807	0.000975	0.000194	0.004977	0.000376	0.000158	0.000379	0.005889	0.062134	0.005245	0.003377	0.070755
0.000518	0.000206	2E-05	0	0.000226	0	0	0	0.000226	0.000235	2.28E-05	0	0.000257	0	0	0	0.000257	0.000608	0.000382	0	0.00099



SOx_RUNE	SOx_IDLEX	SOx_STREX	SOx_TOTEX	NH3_RUNEX	Fuel Consumption
3.03E-06	0	8.37E-08	3.11E-06	4.19986E-06	0.033198
0.00152	8.03E-05	0	0.0016	0.014400399	15.09362
0	0	0	0	0.003714875	0.973322
0.01201	0	0.000454	0.012464	0.123548114	132.9429
8.79E-05	0	0	8.79E-05	0.00011722	0.828352
0	0	0	0	0	0
0.000103	0	5.02E-06	0.000108	0.001376626	1.150318
0.00165	0	7.02E-05	0.00172	0.016822432	18.3496
5.56E-07	0	0	5.56E-07	4.32234E-07	0.005245
0	0	0	0	0	0
1.19E-08	0	6.31E-10	1.25E-08	1.89052E-07	0.000133
0.008124	0	0.000288	0.008412	0.070126873	89.72537
5.61E-05	0	0	5.61E-05	5.41114E-05	0.529212
0	0	0	0	0	0
5.27E-06	0	2.85E-07	5.56E-06	8.29232E-05	0.05929
0.001552	5.84E-06	1.81E-05	0.001576	0.007299251	16.81012
0.000605	3.73E-06	0	0.000609	0.012008978	5.741893
0.000216	8.4E-07	2.33E-06	0.000219	0.000907947	2.337657
0.000254	1.83E-06	0	0.000256	0.005195099	2.409791
7.8E-05	0	8.32E-06	8.63E-05	0.000339245	0.920954
0.004544	0	0.00017	0.004714	0.032272949	50.27991
0.000148	0	0	0.000148	0.000110168	1.391069
0	0	0	0	0	0
5.75E-06	0	4E-07	6.15E-06	9.15128E-05	0.065621
9.81E-05	0	2.2E-08	9.81E-05	0.000221005	1.046435
2.89E-05	0	0	2.89E-05	0.000399781	0.272785
0.000427	2.87E-06	5.55E-06	0.000436	0.001008866	4.6481
0.000738	4.06E-05	0	0.000779	0.008304816	7.346328
0	0	0	0	0.00078279	0.095838
0.00016	6.19E-07	1.06E-06	0.000161	0.000397393	1.721213
4.82E-05	1.48E-06	0	4.97E-05	0.000460242	0.468918
0	0	0	0	1.38346E-06	0.000158
2.86E-05	1.76E-06	1.73E-07	3.05E-05	0.000130711	0.325622
2.87E-05	2.47E-06	0	3.11E-05	0.00025556	0.293759

0	0	0	0	8.49311E-05	0.01347
8.59E-05	0	1.69E-07	8.61E-05	0.000277323	0.917955
7.7E-05	0	0	7.7E-05	0.001164237	0.725813
0	0	0	0	0	0

Sheet 12: Raw EMFAC2021 Output for 2040 - Marin County

Source: EMFAC2021 (v1.0.2) Emissions Inventory

Region Type: County

Region: Marin

Calendar Year: 2040

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Con	NOx_RUNE	NOx_IDLE	NOx_STRE	NOx_TOTE	PM2.5_RUI	PM2.5_IDL	PM2.5_STR	PM2.5_TO	PM2.5_PM
Marin	2040	HHDT	Aggregate	Aggregate	Gasoline	0.265333	31.97697	31.97697	0	5.308792	0	8.36E-05	0	4.36E-07	8.41E-05	5.04E-08	0	2.77E-09	5.31E-08	1.76E-07
Marin	2040	HHDT	Aggregate	Aggregate	Diesel	825.3743	82766.22	82766.22	0	11409.09	0	0.133293	0.043182	0.035215	0.21169	0.002185	1.91E-05	0	0.002204	0.000806
Marin	2040	HHDT	Aggregate	Aggregate	Electricity	229.9686	17739.52	0	17739.52	2359.231	32951.12	0	0	0	0	0	0	0	0	0.000167
Marin	2040	HHDT	Aggregate	Aggregate	Natural Gas	98.62091	5943.089	5943.089	0	729.6413	0	0.003171	0.000815	0	0.003986	1.02E-05	2.43E-06	0	1.27E-05	5.9E-05
Marin	2040	LDA	Aggregate	Aggregate	Gasoline	100140.7	3359196	3359196	0	465564	0	0.079321	0	0.089766	0.169087	0.001858	0	0.000458	0.002316	0.007406
Marin	2040	LDA	Aggregate	Aggregate	Diesel	121.0736	2816.782	2816.782	0	497.8826	0	0.000201	0	0	0.000201	1.1E-05	0	0	1.1E-05	6.21E-06
Marin	2040	LDA	Aggregate	Aggregate	Electricity	13482.85	531035.2	0	531035.2	63541.78	205023.4	0	0	0	0	0	0	0	0	0.001171
Marin	2040	LDA	Aggregate	Aggregate	Plug-in Hyb	4639.771	162425.1	67029.71	95395.42	19185.45	28812.26	0.000466	0	0.002479	0.002945	3.74E-05	0	1.94E-05	5.68E-05	0.000358
Marin	2040	LDT1	Aggregate	Aggregate	Gasoline	8094.811	248693.3	248693.3	0	35996.06	0	0.007466	0	0.008377	0.015843	0.000166	0	4.43E-05	0.00021	0.000548
Marin	2040	LDT1	Aggregate	Aggregate	Diesel	0.076354	2.677543	2.677543	0	0.35864	0	8.57E-08	0	0	8.57E-08	1.13E-08	0	0	1.13E-08	5.9E-09
Marin	2040	LDT1	Aggregate	Aggregate	Electricity	182.186	7433.676	0	7433.676	868.4775	2870.013	0	0	0	0	0	0	0	0	1.64E-05
Marin	2040	LDT1	Aggregate	Aggregate	Plug-in Hyb	137.6385	5108.105	2083.302	3024.803	569.1351	913.5806	1.45E-05	0	7.35E-05	8.8E-05	1.04E-06	0	4.91E-07	1.53E-06	1.13E-05
Marin	2040	LDT2	Aggregate	Aggregate	Gasoline	62378.45	2067017	2067017	0	286237.4	0	0.058776	0	0.070641	0.129418	0.00123	0	0.000303	0.001533	0.004557
Marin	2040	LDT2	Aggregate	Aggregate	Diesel	265.5494	8374.93	8374.93	0	1198.118	0	0.000257	0	0	0.000257	3.65E-05	0	0	3.65E-05	1.85E-05
Marin	2040	LDT2	Aggregate	Aggregate	Electricity	2091.021	59066.24	0	59066.24	9982.587	22804.45	0	0	0	0	0	0	0	0	0.00013
Marin	2040	LDT2	Aggregate	Aggregate	Plug-in Hyb	1501.287	53301.08	21876.17	31424.91	6207.822	9491.26	0.000152	0	0.000802	0.000954	1.16E-05	0	5.82E-06	1.74E-05	0.000118
Marin	2040	LHDT1	Aggregate	Aggregate	Gasoline	3201.58	107753.9	107753.9	0	47698.77	0	0.003564	9.4E-05	0.023469	0.027127	0.000142	0	6.52E-06	0.000148	0.000238
Marin	2040	LHDT1	Aggregate	Aggregate	Diesel	2067.835	69190.61	69190.61	0	26010.77	0	0.033382	0.002634	0	0.036017	0.001614	5.98E-05	0	0.001674	0.000229
Marin	2040	LHDT1	Aggregate	Aggregate	Electricity	2053.729	96173.32	0	96173.32	28786.16	63013.95	0	0	0	0	0	0	0	0	0.000212
Marin	2040	LHDT2	Aggregate	Aggregate	Gasoline	372.1311	12335.8	12335.8	0	5544.199	0	0.000406	9.83E-06	0.002487	0.002903	1.55E-05	0	5.96E-07	1.61E-05	2.72E-05
Marin	2040	LHDT2	Aggregate	Aggregate	Diesel	960.7442	31605.18	31605.18	0	12084.95	0	0.016499	0.001213	0	0.017712	0.000809	2.78E-05	0	0.000837	0.000105
Marin	2040	LHDT2	Aggregate	Aggregate	Electricity	512.4749	23170.76	0	23170.76	6785.869	14941	0	0	0	0	0	0	0	0	5.11E-05
Marin	2040	MCY	Aggregate	Aggregate	Gasoline	6288.133	33128.3	33128.3	0	12576.27	0	0.017852	0	0.001189	0.019041	7.01E-05	0	4.51E-05	0.000115	3.65E-05
Marin	2040	MDV	Aggregate	Aggregate	Gasoline	35353.14	1142685	1142685	0	161808.5	0	0.036678	0	0.043293	0.079971	0.000684	0	0.000173	0.000857	0.002519
Marin	2040	MDV	Aggregate	Aggregate	Diesel	484.6184	14143.17	14143.17	0	2140.287	0	0.000236	0	0	0.000236	2.64E-05	0	0	2.64E-05	3.12E-05
Marin	2040	MDV	Aggregate	Aggregate	Electricity	1932.568	54034.38	0	54034.38	9194.628	20861.73	0	0	0	0	0	0	0	0	0.000119
Marin	2040	MDV	Aggregate	Aggregate	Plug-in Hyb	936.4223	32353.43	13287.18	19066.25	3872.106	5758.575	9.24E-05	0	0.0005	0.000593	7.19E-06	0	3.72E-06	1.09E-05	7.13E-05
Marin	2040	MH	Aggregate	Aggregate	Gasoline	336.3522	3574.971	3574.971	0	33.64868	0	0.000444	0	1.58E-05	0.00046	5.29E-06	0	1.24E-08	5.3E-06	1.18E-05
Marin	2040	MH	Aggregate	Aggregate	Diesel	250.2206	2223.465	2223.465	0	25.02206	0	0.006706	0	0	0.006706	8.91E-05	0	0	8.91E-05	9.8E-06
Marin	2040	MHDT	Aggregate	Aggregate	Gasoline	213.6184	9735.838	9735.838	0	4274.077	0	0.001086	1.5E-05	0.001595	0.002697	1.45E-05	0	2.1E-06	1.66E-05	3.22E-05
Marin	2040	MHDT	Aggregate	Aggregate	Diesel	1141.268	42365.29	42365.29	0	12822.26	0	0.022553	0.010287	0.018848	0.051688	0.000177	4.58E-06	0	0.000181	0.00014
Marin	2040	MHDT	Aggregate	Aggregate	Electricity	700.7586	34339.85	0	34339.85	8888.581	37591.98	0	0	0	0	0	0	0	0	0.000114
Marin	2040	MHDT	Aggregate	Aggregate	Natural Gas	24.33578	913.4865	913.4865	0	216.1279	0	7.32E-05	0.000172	0	0.000246	1.49E-06	6.01E-07	0	2.09E-06	3.02E-06
Marin	2040	OBUS	Aggregate	Aggregate	Gasoline	63.95906	1941.714	1941.714	0	1279.693	0	0.00048	3.86E-06	0.000514	0.000998	2.46E-06	0	3.83E-07	2.85E-06	6.42E-06

Marin	2040 OBUS	Aggregate	Aggregate	Diesel	49.51237	3242.148	3242.148	0	620.6498	0	0.004592	0.000437	0.000768	0.005798	8.55E-05	4.14E-07	0	8.59E-05	1.07E-05
Marin	2040 OBUS	Aggregate	Aggregate	Electricity	18.84043	1325.15	0	1325.15	376.9594	1468.064	0	0	0	0	0	0	0	0	4.38E-06
Marin	2040 OBUS	Aggregate	Aggregate	Natural Gas	0.536666	22.2987	22.2987	0	4.776326	0	2.26E-06	8.76E-07	0	3.14E-06	3.76E-08	3.1E-09	0	4.07E-08	7.37E-08
Marin	2040 SBUS	Aggregate	Aggregate	Gasoline	42.43728	2152.499	2152.499	0	169.7491	0	0.000396	3.65E-05	0.00018	0.000613	2.37E-06	0	1.27E-07	2.5E-06	4.75E-06
Marin	2040 SBUS	Aggregate	Aggregate	Diesel	71.83225	1516.25	1516.25	0	1040.131	0	0.001156	0.000692	0.00075	0.002598	8.63E-06	2.58E-07	0	8.89E-06	5.01E-06
Marin	2040 SBUS	Aggregate	Aggregate	Electricity	40.81456	1308.597	0	1308.597	483.5876	1378.549	0	0	0	0	0	0	0	0	3.76E-06
Marin	2040 SBUS	Aggregate	Aggregate	Natural Gas	4.555479	94.6207	94.6207	0	65.96334	0	3.15E-05	2.57E-05	0	5.72E-05	3.52E-07	7.57E-08	0	4.28E-07	3.13E-07
Marin	2040 UBUS	Aggregate	Aggregate	Gasoline	33.83439	2940.766	2940.766	0	135.3376	0	5.34E-05	0	4.24E-05	9.58E-05	3.88E-06	0	2E-08	3.9E-06	6.48E-06
Marin	2040 UBUS	Aggregate	Aggregate	Diesel	5.230331	506.6197	506.6197	0	20.92132	0	7.13E-05	0	0	7.13E-05	1.28E-06	0	0	1.28E-06	1.89E-06
Marin	2040 UBUS	Aggregate	Aggregate	Electricity	71.95567	9016.287	0	9016.287	287.8227	15717.59	0	0	0	0	0	0	0	0	6.23E-05
Marin	2040 UBUS	Aggregate	Aggregate	Natural Gas	2.113363	204.7043	204.7043	0	8.45345	0	5.03E-06	0	0	5.03E-06	3.93E-08	0	0	3.93E-08	7.65E-07

PM2.5_PM	PM2.5_TO	PM10_RUN	PM10_IDLE	PM10_STR	PM10_TOT	PM10_PM	PM10_PM	PM10_TOT	CO2_RUNE	CO2_IDLE	CO2_STRE	CO2_TOTE	CH4_RUNE	CH4_IDLE	CH4_STRE	CH4_TOTE	N2O_RUNE	N2O_IDLE	N2O_STRE	N2O_TOTE
1.18E-06	1.41E-06	5.48E-08	0	3.02E-09	5.78E-08	7.05E-07	3.36E-06	4.12E-06	0.064851	0	0.000254	0.065106	3.44E-06	0	8.32E-10	3.44E-06	3.88E-06	0	2.37E-08	3.9E-06
0.002714	0.005725	0.002284	2E-05	0	0.002304	0.003224	0.007755	0.013283	123.8566	8.302358	0	132.159	5.59E-05	0.000197	0	0.000253	0.019514	0.001308	0	0.020822
0.000336	0.000503	0	0	0	0	0.000666	0.000961	0.001627	0	0	0	0	0	0	0	0	0	0	0	0
0.000395	0.000467	1.11E-05	2.64E-06	0	1.38E-05	0.000236	0.001129	0.001379	8.470335	0.959406	0	9.429742	0.007248	0.002019	0	0.009267	0.001727	0.000196	0	0.001922
0.008619	0.01834	0.002021	0	0.000498	0.002518	0.029623	0.024626	0.056767	830.0412	0	28.22096	858.2621	0.003768	0	0.01856	0.022328	0.011997	0	0.013315	0.025312
7.38E-06	2.45E-05	1.15E-05	0	0	1.15E-05	2.48E-05	2.11E-05	5.74E-05	0.616646	0	0	0.616646	1.22E-06	0	0	1.22E-06	9.72E-05	0	0	9.72E-05
0.0009	0.002071	0	0	0	0	0.004683	0.002571	0.007254	0	0	0	0	0	0	0	0	0	0	0	0
0.000242	0.000657	4.07E-05	0	2.11E-05	6.18E-05	0.001432	0.000691	0.002185	19.57758	0	1.193015	20.7706	5.73E-05	0	0.000866	0.000923	7.61E-05	0	0.0004	0.000476
0.000763	0.001522	0.00018	0	4.82E-05	0.000228	0.002193	0.002181	0.004602	72.49466	0	2.627056	75.12171	0.00035	0	0.001763	0.002113	0.001	0	0.001145	0.002145
8.04E-09	2.52E-08	1.18E-08	0	0	1.18E-08	2.36E-08	2.3E-08	5.84E-08	0.001004	0	0	0.001004	1.53E-09	0	0	1.53E-09	1.58E-07	0	0	1.58E-07
1.26E-05	2.9E-05	0	0	0	0	6.56E-05	3.6E-05	0.000102	0	0	0	0	0	0	0	0	0	0	0	0
7.62E-06	2.04E-05	1.13E-06	0	5.34E-07	1.66E-06	4.5E-05	2.18E-05	6.85E-05	0.608487	0	0.040069	0.648556	1.79E-06	0	2.59E-05	2.76E-05	2.39E-06	0	1.2E-05	1.44E-05
0.006261	0.012351	0.001337	0	0.00033	0.001667	0.018228	0.017888	0.037783	619.6769	0	21.51514	641.1921	0.003039	0	0.014738	0.017777	0.008097	0	0.009846	0.017943
2.56E-05	8.06E-05	3.82E-05	0	0	3.82E-05	7.39E-05	7.32E-05	0.000185	2.400195	0	0	2.400195	4.84E-06	0	0	4.84E-06	0.000378	0	0	0.000378
0.0001	0.00023	0	0	0	0	0.000521	0.000286	0.000807	0	0	0	0	0	0	0	0	0	0	0	0
7.95E-05	0.000214	1.26E-05	0	6.32E-06	1.89E-05	0.00047	0.000227	0.000716	6.389411	0	0.462142	6.851553	1.87E-05	0	0.000281	0.000299	2.49E-05	0	0.00013	0.000155
0.003243	0.003628	0.000154	0	7.1E-06	0.000161	0.00095	0.009265	0.010376	90.90066	0.386099	1.267255	92.55401	0.00016	0.00031	0.001178	0.001649	0.000273	8.85E-06	0.002145	0.002427
0.002082	0.003985	0.001687	6.25E-05	0	0.00175	0.000915	0.005949	0.008614	46.44789	0.270477	0	46.71837	0.000359	1.16E-05	0	0.000371	0.007318	4.26E-05	0	0.00736
0.001447	0.001659	0	0	0	0	0.000848	0.004135	0.004983	0	0	0	0	0	0	0	0	0	0	0	0
0.000433	0.000476	1.68E-05	0	6.48E-07	1.75E-05	0.000109	0.001237	0.001364	11.71813	0.051782	0.144322	11.91423	1.67E-05	3.28E-05	0.000119	0.000169	3.54E-05	9.35E-07	0.000229	0.000265
0.00111	0.002051	0.000845	2.91E-05	0	0.000874	0.000418	0.00317	0.004463	24.75518	0.202534	0	24.95772	0.000181	5.4E-06	0	0.000187	0.0039	3.19E-05	0	0.003932
0.000407	0.000458	0	0	0	0	0.000204	0.001162	0.001366	0	0	0	0	0	0	0	0	0	0	0	0
0.000153	0.000305	7.52E-05	0	4.83E-05	0.000123	0.000146	0.000438	0.000708	6.764704	0	0.558404	7.323107	0.004861	0	0.002037	0.006898	0.001321	0	7.44E-05	0.001395
0.003512	0.006889	0.000744	0	0.000188	0.000932	0.010077	0.010035	0.021044	415.6387	0	14.75329	430.3919	0.001794	0	0.008776	0.01057	0.004708	0	0.00577	0.010478
4.45E-05	0.000102	2.76E-05	0	0	2.76E-05	0.000125	0.000127	0.000279	5.378757	0	0	5.378757	3.94E-06	0	0	3.94E-06	0.000847	0	0	0.000847
9.17E-05	0.000211	0	0	0	0	0.000477	0.000262	0.000738	0	0	0	0	0	0	0	0	0	0	0	0
4.83E-05	0.000131	7.82E-06	0	4.05E-06	1.19E-05	0.000285	0.000138	0.000435	3.880809	0	0.350957	4.231766	1.13E-05	0	0.000174	0.000186	1.5E-05	0	8.06E-05	9.55E-05
6.21E-05	7.92E-05	5.76E-06	0	1.35E-08	5.77E-06	4.73E-05	0.000177	0.00023	7.664164	0	0.001116	7.665281	1.64E-05	0	1.23E-06	1.76E-05	5.09E-05	0	1.83E-06	5.27E-05
3.84E-05	0.000137	9.31E-05	0	0	9.31E-05	3.92E-05	0.00011	0.000242	2.663691	0	0	2.663691	1.03E-05	0	0	1.03E-05	0.00042	0	0	0.00042
0.000169	0.000218	1.58E-05	0	2.29E-06	1.81E-05	0.000129	0.000483	0.00063	16.94479	0.112992	0.183201	17.24098	3.94E-05	6.32E-05	0.000185	0.000287	8.97E-05	1.37E-06	0.000136	0.000227
0.000742	0.001063	0.000185	4.79E-06	0	0.000189	0.00056	0.00212	0.002869	49.12084	2.613084	0	51.73393	1.85E-05	1.1E-05	0	2.94E-05	0.007739	0.000412	0	0.008151
0.0003	0.000414	0	0	0	0	0.000454	0.000858	0.001312	0	0	0	0	0	0	0	0	0	0	0	0
1.61E-05	2.12E-05	1.62E-06	6.54E-07	0	2.28E-06	1.21E-05	4.6E-05	6.04E-05	0.954474	0.146997	0	1.101471	0.000791	0.000415	0	0.001206	0.000195	3E-05	0	0.000225
3.36E-05	4.28E-05	2.68E-06	0	4.16E-07	3.1E-06	2.57E-05	9.59E-05	0.000125	3.409176	0.025329	0.04137	3.475875	1.46E-05	1.32E-05	4.57E-05	7.35E-05	2.6E-05	2.93E-07	3.58E-05	6.21E-05



7.91E-05	0.000176	8.93E-05	4.33E-07	0	8.98E-05	4.29E-05	0.000226	0.000359	4.678586	0.144679	0	4.823265	8.17E-06	2.73E-06	0	1.09E-05	0.000737	2.28E-05	0	0.00076
1.15E-05	1.58E-05	0	0	0	0	1.75E-05	3.27E-05	5.02E-05	0	0	0	0	0	0	0	0	0	0	0	0
3.97E-07	5.11E-07	4.09E-08	3.37E-09	0	4.43E-08	2.95E-07	1.13E-06	1.47E-06	0.022483	0.000688	0	0.02317	2.07E-05	2.09E-06	0	2.28E-05	4.58E-06	1.4E-07	0	4.72E-06
3.73E-05	4.45E-05	2.58E-06	0	1.38E-07	2.72E-06	1.9E-05	0.000107	0.000128	1.817009	0.115138	0.009788	1.941935	4.48E-06	0.000117	1.32E-05	0.000135	3.5E-05	3.45E-06	1.59E-05	5.44E-05
2.63E-05	4.02E-05	9.02E-06	2.7E-07	0	9.29E-06	2.01E-05	7.51E-05	0.000104	1.777457	0.154471	0	1.931928	1.23E-06	6.23E-07	0	1.85E-06	0.00028	2.43E-05	0	0.000304
1.13E-05	1.51E-05	0	0	0	0	1.5E-05	3.24E-05	4.74E-05	0	0	0	0	0	0	0	0	0	0	0	0
1.64E-06	2.38E-06	3.83E-07	8.23E-08	0	4.66E-07	1.25E-06	4.68E-06	6.4E-06	0.118284	0.021077	0	0.139361	0.000282	6.7E-05	0	0.000349	2.41E-05	4.3E-06	0	2.84E-05
0.000103	0.000114	4.22E-06	0	2.17E-08	4.24E-06	2.59E-05	0.000295	0.000325	2.755915	0	0.005182	2.761097	4.31E-06	0	4.13E-06	8.43E-06	9.52E-06	0	7.48E-06	1.7E-05
2.15E-05	2.47E-05	1.34E-06	0	0	1.34E-06	7.57E-06	6.14E-05	7.03E-05	0.43583	0	0	0.43583	8.61E-07	0	0	8.61E-07	6.87E-05	0	0	6.87E-05
0.000191	0.000254	0	0	0	0	0.000249	0.000547	0.000796	0	0	0	0	0	0	0	0	0	0	0	0
8.69E-06	9.49E-06	4.11E-08	0	0	4.11E-08	3.06E-06	2.48E-05	2.79E-05	0.203675	0	0	0.203675	0.000602	0	0	0.000602	4.15E-05	0	0	4.15E-05

ROG_RUNE	ROG_IDLE	ROG_STRE	ROG_TOTE	ROG_DIUR	ROG_HOTS	ROG_RUNL	ROG_TOTA	TOG_RUNE	TOG_IDLE	TOG_STRE	TOG_TOTE	TOG_DIUR	TOG_HOTS	TOG_RUNL	TOG_TOTA	CO_RUNEX	CO_IDLE	CO_STREX	CO_TOTEX	SOx_RUNE
1.6E-05	0	4.46E-09	1.6E-05	3.39E-07	5.55E-08	7E-07	1.71E-05	2.33E-05	0	4.89E-09	2.33E-05	3.39E-07	5.55E-08	7E-07	2.44E-05	0.001081	0	2.93E-05	0.00111	6.41E-07
0.001204	0.00424	0	0.005444	0	0	0	0.005444	0.001371	0.004827	0	0.006197	0	0	0	0.006197	0.005157	0.062405	0	0.067562	0.001173
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.000156	3.03E-05	0	0.000186	0	0	0	0.000186	0.007457	0.002062	0	0.009519	0	0	0	0.009519	0.064412	0.007571	0	0.071983	0
0.011759	0	0.074872	0.086631	0.109158	0.022498	0.082286	0.300574	0.017158	0	0.081976	0.099134	0.109158	0.022498	0.082286	0.313076	1.635828	0	0.94102	2.576849	0.008206
2.63E-05	0	0	2.63E-05	0	0	0	2.63E-05	2.99E-05	0	0	2.99E-05	0	0	0	2.99E-05	0.000575	0	0	0.000575	5.84E-06
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.000191	0	0.003736	0.003927	0.003924	0.000836	0.001693	0.010381	0.000279	0	0.00409	0.00437	0.003924	0.000836	0.001693	0.010823	0.02909	0	0.029148	0.058238	0.000194
0.001181	0	0.007578	0.008759	0.016298	0.003048	0.011895	0.039999	0.001723	0	0.008296	0.01002	0.016298	0.003048	0.011895	0.041261	0.139231	0	0.085499	0.22473	0.000717
3.29E-08	0	0	3.29E-08	0	0	0	3.29E-08	3.75E-08	0	0	3.75E-08	0	0	0	3.75E-08	3.44E-07	0	0	3.44E-07	9.52E-09
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.95E-06	0	0.000111	0.000117	6.66E-05	1.8E-05	2.39E-05	0.000225	8.68E-06	0	0.000121	0.00013	6.66E-05	1.8E-05	2.39E-05	0.000239	0.000904	0	0.000865	0.001769	6.02E-06
0.009731	0	0.061238	0.07097	0.084505	0.016247	0.06421	0.235931	0.0142	0	0.067048	0.081248	0.084505	0.016247	0.06421	0.24621	1.184897	0	0.736401	1.921297	0.006126
0.000104	0	0	0.000104	0	0	0	0.000104	0.000119	0	0	0.000119	0	0	0	0.000119	0.001129	0	0	0.001129	2.27E-05
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6.25E-05	0	0.001209	0.001271	0.00097	0.000227	0.000384	0.002853	9.12E-05	0	0.001324	0.001415	0.00097	0.000227	0.000384	0.002996	0.009494	0	0.009431	0.018925	6.32E-05
0.000561	0.001079	0.005414	0.007054	0.007631	0.001303	0.01019	0.026179	0.000818	0.001575	0.005928	0.008321	0.007631	0.001303	0.01019	0.027446	0.069932	0.013345	0.169172	0.252449	0.000899
0.007728	0.00025	0	0.007978	0	0	0	0.007978	0.008798	0.000285	0	0.009083	0	0	0	0.009083	0.020438	0.002074	0	0.022512	0.00044
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.68E-05	0.000113	0.000536	0.000706	0.000894	0.000152	0.001205	0.002957	8.29E-05	0.000165	0.000587	0.000834	0.000894	0.000152	0.001205	0.003086	0.008098	0.001551	0.020001	0.02965	0.000116
0.003905	0.000116	0	0.004021	0	0	0	0.004021	0.004446	0.000132	0	0.004578	0	0	0	0.004578	0.010342	0.000963	0	0.011305	0.000235
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.029472	0	0.014568	0.044041	0.025154	0.049528	0.053462	0.172185	0.036555	0	0.015856	0.052412	0.025154	0.049528	0.053462	0.180556	0.363407	0	0.111544	0.474951	6.69E-05
0.005902	0	0.037495	0.043397	0.048846	0.009415	0.036789	0.138447	0.008613	0	0.041053	0.049665	0.048846	0.009415	0.036789	0.144715	0.680303	0	0.425354	1.105657	0.004109
8.48E-05	0	0	8.48E-05	0	0	0	8.48E-05	9.65E-05	0	0	9.65E-05	0	0	0	9.65E-05	0.002329	0	0	0.002329	5.1E-05
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.79E-05	0	0.000754	0.000792	0.000653	0.000148	0.000267	0.00186	5.54E-05	0	0.000826	0.000881	0.000653	0.000148	0.000267	0.001949	0.005766	0	0.005883	0.011649	3.84E-05
4.74E-05	0	4.49E-06	5.18E-05	0.0007	0.000126	3.96E-06	0.000882	6.91E-05	0	4.92E-06	7.4E-05	0.0007	0.000126	3.96E-06	0.000904	0.000672	0	9.63E-05	0.000768	7.58E-05
0.000222	0	0	0.000222	0	0	0	0.000222	0.000253	0	0	0.000253	0	0	0	0.000253	0.000672	0	0	0.000672	2.52E-05
0.000159	0.000242	0.000927	0.001329	0.00052	8.35E-05	0.001003	0.002935	0.000232	0.000353	0.001015	0.001601	0.00052	8.35E-05	0.001003	0.003207	0.002714	0.003602	0.017398	0.023714	0.000168
0.000398	0.000236	0	0.000634	0	0	0	0.000634	0.000453	0.000269	0	0.000721	0	0	0	0.000721	0.002496	0.00979	0	0.012286	0.000465
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.13E-05	5.93E-06	0	1.72E-05	0	0	0	1.72E-05	0.000807	0.000424	0	0.001231	0	0	0	0.001231	0.002976	0.001189	0	0.004165	0
6.85E-05	5.29E-05	0.000249	0.00037	0.000294	5.07E-05	0.000331	0.001045	1E-04	7.72E-05	0.000272	0.000449	0.000294	5.07E-05	0.000331	0.001125	0.001474	0.000409	0.00486	0.006743	3.37E-05

0.000176	5.87E-05	0	0.000234	0	0	0	0.000234	0.0002	6.68E-05	0	0.000267	0	0	0	0.000267	0.000566	0.000916	0	0.001481	4.43E-05
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.96E-07	2.99E-08	0	3.26E-07	0	0	0	3.26E-07	2.12E-05	2.14E-06	0	2.33E-05	0	0	0	2.33E-05	8.36E-05	6.14E-06	0	8.97E-05	0
1.9E-05	0.000498	7.21E-05	0.000589	0.000204	3.45E-05	0.000143	0.00097	2.78E-05	0.000726	7.89E-05	0.000833	0.000204	3.45E-05	0.000143	0.001214	0.00047	0.003847	0.001521	0.005837	1.8E-05
2.65E-05	1.34E-05	0	3.99E-05	0	0	0	3.99E-05	3.01E-05	1.53E-05	0	4.54E-05	0	0	0	4.54E-05	0.000126	0.000533	0	0.00066	1.68E-05
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.03E-06	9.57E-07	0	4.99E-06	0	0	0	4.99E-06	0.000288	6.83E-05	0	0.000356	0	0	0	0.000356	0.000855	0.000146	0	0.001001	0
1.13E-05	0	1.39E-05	2.52E-05	1.15E-05	3.67E-06	1.35E-05	5.39E-05	1.64E-05	0	1.53E-05	3.17E-05	1.15E-05	3.67E-06	1.35E-05	6.04E-05	0.001865	0	0.000901	0.002766	2.72E-05
1.85E-05	0	0	1.85E-05	0	0	0	1.85E-05	2.11E-05	0	0	2.11E-05	0	0	0	2.11E-05	1.5E-05	0	0	1.5E-05	4.13E-06
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8.6E-06	0	0	8.6E-06	0	0	0	8.6E-06	0.000614	0	0	0.000614	0	0	0	0.000614	0.004845	0	0	0.004845	0

SOx\_IDLEX SOx\_STREX SOx\_TOTE NH3\_RUNE Fuel Consumption

0	2.52E-09	6.44E-07	1.59E-06	0.006865
7.86E-05	0	0.001251	0.019847	11.80571
0	0	0	0	0
0	0	0	0.004747	1.089934
0	0.000279	0.008485	0.154467	90.50267
0	0	5.84E-06	9.63E-06	0.055085
0	0	0	0	0
0	1.18E-05	0.000205	0.003096	2.190233
0	2.6E-05	0.000743	0.011239	7.921491
0	0	9.52E-09	9.15E-09	8.97E-05
0	0	0	0	0
0	3.96E-07	6.41E-06	9.65E-05	0.068389
0	0.000213	0.006339	0.094724	67.6129
0	0	2.27E-05	2.86E-05	0.214408
0	0	0	0	0
0	4.57E-06	6.77E-05	0.001013	0.722488
3.82E-06	1.25E-05	0.000915	0.005345	9.759705
2.56E-06	0	0.000443	0.016147	4.173333
0	0	0	0	0
5.12E-07	1.43E-06	0.000118	0.000612	1.256341
1.92E-06	0	0.000236	0.007395	2.229463
0	0	0	0	0
0	5.52E-06	7.24E-05	0.000333	0.772212
0	0.000146	0.004255	0.052362	45.38429
0	0	5.1E-05	4.83E-05	0.480482
0	0	0	0	0
0	3.47E-06	4.18E-05	0.000615	0.446234
0	1.1E-08	7.58E-05	0.000177	0.808294
0	0	2.52E-05	0.000498	0.237946
1.12E-06	1.81E-06	0.00017	0.000483	1.81804
2.47E-05	0	0.00049	0.010187	4.621371
0	0	0	0	0
0	0	0	0.001067	0.127313
2.5E-07	4.09E-07	3.44E-05	9.63E-05	0.366527

1.37E-06	0	4.57E-05	0.000764	0.43086
0	0	0	0	0
0	0	0	2.61E-05	0.002678
1.14E-06	9.68E-08	1.92E-05	0.000107	0.204775
1.46E-06	0	1.83E-05	0.000354	0.172578
0	0	0	0	0
0	0	0	0.000111	0.016108
0	5.12E-08	2.73E-05	0.000146	0.291154
0	0	4.13E-06	0.000123	0.038933
0	0	0	0	0
0	0	0	0.000219	0.023542

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## **Appendix D: Supplemental Biological Resources Information**

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### Special-Status Plants Known or Suspected to Occur in Marin County

Species	Status	Habitat
North Coast semaphore grass ( <i>Pleuropogon hooverianus</i> )	ST, 1B.1	Broadleafed upland forest, meadows and seeps, North Coast coniferous forest
Pacific Grove clover ( <i>Trifolium polyodon</i> )	SR, 1B.1	Closed-cone coniferous forest, coastal prairie, meadows and seeps, valley and foothill grassland
Mason's ceanothus ( <i>Ceanothus masonii</i> )	SR, 1B.2	Chaparral
Point Reyes blennosperma ( <i>Blennosperma nanum</i> var. <i>robustum</i> )	SR, 1B.2	Coastal prairie, coastal scrub
Mason's lilaeopsis ( <i>Lilaeopsis masonii</i> )	SR, 1B.1	Marshes and swamps, riparian scrub
Point Reyes meadowfoam ( <i>Limnanthes douglasii</i> ssp. <i>sulphurea</i> )	SE, 1B.2	Coastal prairie, marshes and swamps, meadows and seeps, vernal pools
Marin western flax ( <i>Hesperolinon congestum</i> )	FT, ST, 1B.1	Chaparral, valley and foothill grassland; microhabitat is serpentinite
Tiburon mariposa-lily ( <i>Calochortus tiburonensis</i> )	FT, ST, 1B.1	Valley and foothill grassland
Santa Cruz tarplant ( <i>Holocarpha macradenia</i> )	FT, SE, 1B.1	Coastal prairie, coastal scrub, valley and foothill grassland; microhabitat: clay (often), sandy soils
Tiburon paintbrush ( <i>Castilleja affinis</i> var. <i>neglecta</i> )	FE, ST, 1B.2	Valley and foothill grassland
Soft salty bird's-beak ( <i>Chloropyron molle</i> ssp. <i>molle</i> )	FE, SR, 1B.2	Marshes and swamps
Golden larkspur ( <i>Delphinium luteum</i> )	FE, SR, 1B.1	Chaparral, coastal prairie, coastal scrub; microhabitat: rocky substrate
Baker's larkspur ( <i>Delphinium bakeri</i> )	FE, SE, 1B.1	Broadleafed upland forest, coastal scrub, valley and foothill grassland; microhabitat: mesic conditions (often), shale
Beach layia ( <i>Layia carnosa</i> )	FE, SE, 1B.1	Coastal dunes, coastal scrub
Marsh sandwort ( <i>Arenaria paludicola</i> )	FE, SE, 1B.1	Marshes and swamps; microhabitat: openings, sandy
Sonoma spineflower ( <i>Chorizanthe valida</i> )	FE, SE, 1B.1	Coastal prairie
Tiburon jewelflower ( <i>Streptanthus glandulosus</i> ssp. <i>niger</i> )	FE, SE, 1B.1	Valley and foothill grassland
Tidestrom's lupin ( <i>Lupinus tidestromii</i> )	FE, SE, 1B.1	Coastal dunes
White-rayed pentachaeta ( <i>Pentachaeta bellidiflora</i> )	FE, SE, 1B.1	Cismontane woodland, Valley and foothill grassland

Species	Status	Habitat
Contra Costa goldfields ( <i>Lasthenia conjugens</i> )	FE, 1B.1	Cismontane woodland, playas, valley and foothill grassland, vernal pools; microhabitat: mesic conditions
Robust spineflower ( <i>Chorizanthe robusta</i> var. <i>robusta</i> )	FE, 1B.1	Coastal strand, northern coastal scrub, foothill woodland, dunes
Sonoma alopecurus ( <i>Alopecurus aequalis</i> var. <i>sonomensis</i> )	FE, 1B.1	Marshes and swamps, riparian scrub
Two-fork clover ( <i>Trifolium amoenum</i> )	FE, 1B.1	Coastal bluff scrub, valley and foothill grassland
Point Reyes paintbrush ( <i>Castilleja leschkeana</i> )	FE, 1A	Marshes and swamps
Island tube lichen ( <i>Hypogymnia schizidiata</i> )	1B.3	Chaparral, closed-cone coniferous forest
Koch's cord moss ( <i>Entosthodon kochii</i> )	1B.3	Cismontane woodland
Mt. Tamalpais manzanita ( <i>Arctostaphylos montana</i> ssp. <i>montana</i> )	1B.3	Chaparral, valley and foothill grassland; microhabitat: rocky substrate, serpentinite
Mt. Vision ceanothus ( <i>Ceanothus gloriosus</i> var. <i>porrectus</i> )	1B.3	Closed-cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland
Tamalpais jewelflower ( <i>Streptanthus batrachopus</i> )	1B.3	Chaparral, closed-cone coniferous forest
Tamalpais oak ( <i>Quercus parvula</i> var. <i>tamalpaisensis</i> )	1B.3	Lower montane coniferous forest
Dark-eyed gilia ( <i>Gilia millefoliata</i> )	1B.2	Coastal dunes
Diablo helianthella ( <i>Helianthella castanea</i> )	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; microhabitat: azonal soils, partial shade (often), rocky (usually)
Baker's goldfields ( <i>Lasthenia californica</i> ssp. <i>bakeri</i> )	1B.2	Closed-cone coniferous forest, coastal scrub, marshes and swamps, meadows and seeps
Bent-flowered fiddleneck ( <i>Amsinckia lunaris</i> )	1B.2	Cismontane woodland, coastal bluff scrub, valley and foothill grassland
Blasdale's bent grass ( <i>Agrostis blasdalei</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie
Bluff wallflower ( <i>Erysimum concinnum</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie
Coastal bluff morning-glory ( <i>Calystegia purpurata</i> ssp. <i>saxicola</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, North Coast coniferous forest

Species	Status	Habitat
Coastal marsh milk-vetch ( <i>Astragalus pycnostachyus</i> <i>var. pycnostachyus</i> )	1B.2	Coastal dunes, coastal scrub, marshes and swamps
Coastal triquetrella ( <i>Triquetrella californica</i> )	1B.2	Coastal bluff scrub, coastal scrub
Congested-headed hayfield tarplant ( <i>Hemizonia congesta</i> <i>ssp. congesta</i> )	1B.2	Valley and foothill grassland; microhabitat: roadsides (sometimes)
Fragrant fritillary ( <i>Fritillaria liliacea</i> )	1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland; microhabitat: serpentinite (often)
Franciscan thistle ( <i>Cirsium andrewsii</i> )	1B.2	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub; microhabitat: serpentinite (often)
Western leatherwood ( <i>Dirca occidentalis</i> )	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, closed-cone coniferous forest, North Coast coniferous forest, riparian forest, riparian woodland; microhabitat: mesic conditions
Short-leaved evax ( <i>Hesperivax sparsiflora</i> <i>var. brevifolia</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie
Humboldt Bay owl's-clover ( <i>Castilleja ambigua</i> <i>var. humboldtensis</i> )	1B.2	Marshes and swamps
Marin County navarretia ( <i>Navarretia rosulata</i> )	1B.2	Chaparral, closed-cone coniferous forest
Marin manzanita ( <i>Arctostaphylos virgata</i> )	1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, North Coast coniferous forest; microhabitat: granitic (sometimes), sandstone (sometimes)
Marsh microseris ( <i>Microseris paludosa</i> )	1B.2	Cismontane woodland, closed-cone coniferous forest, coastal scrub, valley and foothill grassland
Minute pocket moss ( <i>Fissidens pauperculus</i> )	1B.2	North Coast coniferous forest
Mt. Tamalpais bristly jewelflower ( <i>Streptanthus glandulosus</i> <i>ssp. pulchellus</i> )	1B.2	Chaparral, valley and foothill grassland
Mt. Tamalpais thistle ( <i>Cirsium hydrophilum</i> <i>var. vaseyi</i> )	1B.2	Broadleafed upland forest, chaparral, meadows and seeps; microhabitat: seeps, serpentinite
Napa false indigo ( <i>Amorpha californica</i> <i>var. napensis</i> )	1B.2	Broadleafed upland forest, chaparral, cismontane woodland
Nicasio ceanothus ( <i>Ceanothus decornutus</i> )	1B.2	Chaparral; microhabitat: clay (sometimes), rocky substrates, serpentinite

Species	Status	Habitat
North Coast phacelia ( <i>Phacelia insularis</i> var. <i>continentis</i> )	1B.2	Coastal bluff scrub, coastal dunes
Northern curly-leaved monardella ( <i>Monardella</i> <i>sinuata</i> ssp. <i>nigrescens</i> )	1B.2	Chaparral, coastal dunes, coastal scrub, lower montane coniferous forest; microhabitat: sandy soils
Perennial goldfields ( <i>Lasthenia californica</i> ssp. <i>macrantha</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub
Point Reyes checkerbloom ( <i>Sidalcea calycosa</i> ssp. <i>rhizomata</i> )	1B.2	Marshes and swamps
Point Reyes horkelia ( <i>Horkelia marinensis</i> )	1B.2	Coastal dunes, coastal prairie, coastal scrub; microhabitat: sandy soils
Point Reyes salty bird's-beak ( <i>Chloropyron maritimum</i> ssp. <i>palustre</i> )	1B.2	Marshes and swamps
Purple-stemmed checkerbloom ( <i>Sidalcea malviflora</i> ssp. <i>purpurea</i> )	1B.2	Broadleafed upland forest, coastal prairie
Round-headed Chinese-houses ( <i>Collinsia corymbosa</i> )	1B.2	Coastal dunes
San Francisco Bay spineflower ( <i>Chorizanthe cuspidata</i> var. <i>cuspidata</i> )	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub; microhabitat: sandy soils
San Francisco collinsia ( <i>Collinsia multicolor</i> )	1B.2	Closed-cone coniferous forest, coastal scrub; microhabitat: serpentinite (sometimes)
San Francisco owl's-clover ( <i>Triphysaria floribunda</i> )	1B.2	Coastal prairie, coastal scrub, valley and foothill grassland
Sanford's arrowhead ( <i>Sagittaria sanfordii</i> )	1B.2	Marshes and swamps
Santa Cruz microseris ( <i>Stebbinsoseris decipiens</i> )	1B.2	Broadleafed upland forest, chaparral, closed- cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland
Supple daisy ( <i>Erigeron supplex</i> )	1B.2	Coastal bluff scrub, coastal prairie
Swamp harebell ( <i>Campanula californica</i> )	1B.2	Bogs and fens, closed-cone coniferous forest, coastal prairie, marshes and swamps, meadows and seeps, North Coast coniferous forest; microhabitat: mesic conditions
Tamalpais lessingia ( <i>Lessingia micradenia</i> var. <i>micradenia</i> )	1B.2	Chaparral, Valley and foothill grassland; microhabitat: roadsides (often), serpentinite (usually)
Thin-lobed horkelia ( <i>Horkelia tenuiloba</i> )	1B.2	Broadleafed upland forest, Chaparral, Valley and foothill grassland; microhabitat: mesic conditions, openings, sandy soils

Species	Status	Habitat
Tiburon buckwheat ( <i>Eriogonum luteolum</i> var. <i>caninum</i> )	1B.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; microhabitat: gravelly, sandy, serpentinite
Woolly-headed spineflower ( <i>Chorizanthe cuspidata</i> var. <i>villosa</i> )	1B.2	Coastal dunes, coastal prairie, coastal scrub; microhabitat: sandy soils
Baker's navarretia ( <i>Navarretia leucocephala</i> ssp. <i>bakeri</i> )	1B.1	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools; microhabitat: mesic conditions
Blue coast gilia ( <i>Gilia capitata</i> ssp. <i>chamissonis</i> )	1B.1	Coastal dunes, coastal scrub
California beaked-rush ( <i>Rhynchospora californica</i> )	1B.1	Bogs and fens, lower montane coniferous forest, marshes and swamps, meadows and seeps
Coast lily ( <i>Lilium maritimum</i> )	1B.1	Broadleafed upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, marshes and swamps, North Coast coniferous forest; microhabitat: roadsides (sometimes)
Kellogg's horkelia ( <i>Horkelia cuneata</i> var. <i>sericea</i> )	1B.1	Chaparral, closed-cone coniferous forest, coastal dunes, coastal scrub; microhabitat: gravelly (sometimes), openings, sandy (sometimes)
Marin checker lily ( <i>Fritillaria lanceolata</i> var. <i>tristulis</i> )	1B.1	Coastal bluff scrub, coastal prairie, coastal scrub
Marin checkerbloom ( <i>Sidalcea hickmanii</i> ssp. <i>viridis</i> )	1B.1	Chaparral
Mount Burdell jewelflower ( <i>Streptanthus anomalus</i> )	1B.1	Cismontane woodland; microhabitat: openings, serpentinite
Pink sand-verbena ( <i>Abronia umbellata</i> var. <i>breviflora</i> )	1B.1	Coastal dunes
Point Reyes rein orchid ( <i>Piperia elegans</i> ssp. <i>decurtata</i> )	1B.1	Coastal bluff scrub, coastal prairie
Raiche's red ribbons ( <i>Clarkia concinna</i> ssp. <i>raichei</i> )	1B.1	Coastal bluff scrub
Rose leptosiphon ( <i>Leptosiphon rosaceus</i> )	1B.1	Coastal bluff scrub
Coast yellow leptosiphon ( <i>Leptosiphon croceus</i> )	1B.1	Coastal prairie bluffs
Woolly-headed gilia ( <i>Gilia capitata</i> ssp. <i>tomentosa</i> )	1B.1	Coastal bluff scrub, Valley and foothill grassland; microhabitat: rocky substrates, serpentinite

Species	Status	Habitat
Mt. Tamalpais jewel-flower <i>Streptanthus glandulosus</i> ssp. <i>Pulchellus</i>	1B	Chaparral / grassland
Hairless popcornflower <i>(Plagiobothrys glaber)</i>	1A	Marshes and swamps, meadows and seeps
Oval-leaved viburnum <i>(Viburnum ellipticum)</i>	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest
Small groundcone <i>(Kopsiopsis hookeri)</i>	2B.3	North Coast coniferous forest
Bristle-stalked sedge <i>(Carex leptalea)</i>	2B.2	Bogs and fens, marshes and swamps, meadows and seeps
Lyngbye's sedge <i>(Carex lyngbyei)</i>	2B.2	Marshes and swamps
Northern meadow sedge <i>(Carex praticola)</i>	2B.2	Meadows and seeps
Oregon polemonium <i>(Polemonium carneum)</i>	2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest
Scouler's catchfly <i>(Silene scouleri</i> ssp. <i>scouleri)</i>	2B.2	Coastal bluff scrub, coastal prairie, valley and foothill grassland
Seaside bittercress <i>(Cardamine angulata)</i>	2B.2	Lower montane coniferous forest, North Coast coniferous forest; microhabitat: streambanks
Water star-grass <i>(Heteranthera dubia)</i>	2B.2	Marshes and swamps: microhabitat: alkaline
Bolander's water-hemlock <i>(Cicuta maculata</i> var. <i>bolanderi)</i>	2B.1	Marshes and swamps
Thurber's reed grass <i>(Calamagrostis crassiglumis)</i>	2B.1	Coastal scrub, marshes and swamps
Whiteworm lichen <i>(Thamnotia vermicularis)</i>	2B.1	Chaparral, Valley and foothill grassland
Streamside daisy <i>(Erigeron biolettii)</i>	3	Broadleafed upland forest, cismontane woodland, North Coast coniferous forest; microhabitat: mesic conditions, rocky substrate
Woolly-headed lessingia <i>(Lessingia hololeuca)</i>	3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland; microhabitat: clay, serpentinite
Marin knotweed <i>(Polygonum marinense)</i>	3.1	Marshes and swamps
Mt. Diablo cottonweed <i>(Micropus amphibolus)</i>	3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland; microhabitat: rocky substrate
San Francisco gumplant <i>(Grindelia hirsutula</i> var. <i>maritima)</i>	3.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; microhabitat sandy (sometimes), serpentinite (sometimes)
Broad-lobed leptosiphon <i>(Leptosiphon latisectus)</i>	4.3*	Broadleafed upland forest, cismontane woodland

Species	Status	Habitat
California bottle-brush grass ( <i>Elymus californicus</i> )	4.3*	Broadleafed upland forest, cismontane woodland, North Coast coniferous forest, riparian woodland
Coast rockcress ( <i>Arabis blepharophylla</i> )	4.3*	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub; microhabitat: rocky substrates
Elongate copper moss ( <i>Mielichhoferia elongata</i> )	4.3*	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, subalpine coniferous forest; microhabitat: acidic (usually), carbonate (sometimes), metamorphic, roadsides (often), vernal mesic (usually)
Glory brush ( <i>Ceanothus gloriosus</i> var. <i>exaltatus</i> )	4.3*	Chaparral
Kern ceanothus ( <i>Ceanothus pinetorum</i> )	4.3*	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest; microhabitat: Granitic, Rocky
Point Reyes ceanothus ( <i>Ceanothus gloriosus</i> var. <i>gloriosus</i> )	4.3*	Closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal scrub; microhabitat: sandy soils
Serpentine collomia ( <i>Collomia diversifolia</i> )	4.3*	Chaparral, cismontane woodland; microhabitat: gravelly (sometimes), rocky (sometimes), serpentinite (sometimes)
Serpentine reed grass ( <i>Calamagrostis ophitidis</i> )	4.3*	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland; microhabitat: rocky substrates, serpentinite
Small spikerush ( <i>Eleocharis parvula</i> )	4.3*	Marshes and swamps
Beach starwort ( <i>Stellaria littoralis</i> )	4.2*	Bogs and fens, coastal bluff scrub, coastal dunes, coastal scrub, marshes and swamps
Brewer's calandrinia ( <i>Calandrinia breweri</i> )	4.2*	Chaparral, coastal scrub; microhabitat: burned areas, disturbed areas, loam (sometimes), sandy (sometimes)
Brewer's milk-vetch ( <i>Astragalus breweri</i> )	4.2*	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland; microhabitat: serpentinite (often), volcanic soils
Bristly leptosiphon ( <i>Leptosiphon acicularis</i> )	4.2*	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland
California lady's-slipper ( <i>Cypripedium californicum</i> )	4.2*	Bogs and fens, lower montane coniferous forest; microhabitat: seeps, serpentinite (usually), streambanks
Carlotta Hall's lace fern ( <i>Aspidotis carlotta-halliae</i> )	4.2*	Chaparral, cismontane woodland; microhabitat: serpentinite (usually)

Species	Status	Habitat
Coast iris ( <i>Iris longipetala</i> )	4.2*	Coastal prairie, lower montane coniferous forest, meadows and seeps; microhabitat: mesic conditions
Buxbaum's sedge ( <i>Carex buxbaumii</i> )	4.2*	Bogs and fens, marshes and swamps, meadows and seeps
Cotula navarretia ( <i>Navarretia cotulifolia</i> )	4.2*	Chaparral, cismontane woodland, valley and foothill grassland; microhabitat: adobe soils
Harlequin lotus ( <i>Hosackia gracilis</i> )	4.2*	Broadleafed upland forest, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, meadows and seeps, North Coast coniferous forest, valley and foothill grassland; microhabitat: roadsides
Gairdner's yampah ( <i>Perideridia gairdneri</i> ssp. <i>gairdneri</i> )	4.2*	Broadleafed upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools
Johnny-nip ( <i>Castilleja ambigua</i> var. <i>ambigua</i> )	4.2*	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools
Large-flowered leptosiphon ( <i>Linanthus grandiflorus</i> )	4.2*	Cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland; sandy (usually)
Lobb's aquatic buttercup ( <i>Ranunculus lobbii</i> )	4.2*	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools
Marsh zigadenus ( <i>Toxicoscordion fontanum</i> )	4.2*	Chaparral, cismontane woodland, lower montane coniferous forest, marshes and swamps, meadows and seeps
Michael's rein orchid ( <i>Piperia michaelii</i> )	4.2*	Chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, lower montane coniferous forest
Mt. Saint Helena morning-glory ( <i>Calystegia collina</i> ssp. <i>oxyphylla</i> )	4.2*	Chaparral, lower montane coniferous forest, valley and foothill grassland; microhabitat: serpentinite
Nodding semaphore grass ( <i>Pleuropogon refractus</i> )	4.2*	Lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, riparian forest
Oakland star-tulip ( <i>Calochortus umbellatus</i> )	4.2*	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland; microhabitat: serpentinite (often)
Ocean bluff milk-vetch ( <i>Astragalus nuttallii</i> var. <i>nuttallii</i> )	4.2*	Coastal bluff scrub, coastal dunes



Species	Status	Habitat
Pink star-tulip ( <i>Calochortus uniflorus</i> )	4.2*	Coastal prairie, coastal scrub, meadows and seeps, North Coast coniferous forest
San Francisco wallflower ( <i>Erysimum franciscanum</i> )	4.2*	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland; microhabitat: granitic (often), serpentinite (often)
Seaside cistanthe ( <i>Cistanthe maritima</i> )	4.2*	Coastal bluff scrub, coastal scrub, valley and foothill grassland; microhabitat: sandy soils
Southwestern spiny rush ( <i>Juncus acutus</i> ssp. <i>leopoldii</i> )	4.2*	Coastal dunes, Marshes and swamps, meadows and seeps
Western dichondra ( <i>Dichondra occidentalis</i> )	4.2*	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland

### Status Designations

#### Federal:

FE = Listed as endangered under the Federal Endangered Species Act  
 FT = Listed as threatened under the Federal Endangered Species Act

#### State:

SE = Listed as endangered under the California Endangered Species Act  
 ST = Listed as threatened under the California Endangered Species Act  
 SR = Listed as rare under the California Native Plant Protection Act

#### CRPR – CNPS Rare Plant Rank:

Rank 1A – Presumed extinct in California  
 Rank 1B – Rare, threatened, or endangered in California and elsewhere  
 Rank 2A – Plants presumed extirpated in California, but more common elsewhere  
 Rank 2B: Rare, threatened, or endangered in California, but more common elsewhere  
 Rank 3 – Plants for which more information is needed – A review list  
 Rank 4 – Plants of limited distribution – A watch list  
 0.1- Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)  
 0.2- Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)  
 0.3- Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

\* = Species with an asterisk are considered to meet the definition of special-status because they are maintained on the CDFG list of Special Animals or Special Plants and have a CNDDDB Element Ranking of 3 or less, or the CDFG has indicated that they may be of a relatively common bird species but their communal roost locations are considered a sensitive resource by the CDFG.

## Special-Status Wildlife Species Known or Suspected to Occur in Marin County

Species	Status	Habitat
Fish		
Steelhead- central California coast Distinct Population Segment (DPS) population 8 ( <i>Oncorhynchus mykiss irideus</i> )	FT	Spawns in freshwater streams in gravel substrates in clear, cool, shady, perennial sections of relatively undisturbed streams.
coho salmon - central California coast ESU ( <i>Oncorhynchus kisutch</i> , population 4)	FE, SE	Spawns in small freshwater streams with dense canopy cover, and medium to small, clean gravel substrates.
Chinook Salmon Sacramento River winter-run population 7 ( <i>Oncorhynchus tshawytscha</i> )	FE, SE	Spawns in freshwater streams.
Green sturgeon Southern Distinct Population Segment ( <i>Acipenser medirostris</i> )	FT, CSSC	Spawns in large river systems such as the Sacramento River; forages in nearshore oceanic waters, bays, and estuaries.
Tidewater goby ( <i>Eucyclogobius newberryi</i> )	FE	Occupies brackish water, marsh/bays with fairly still but not stagnant water and high oxygen levels
Delta smelt ( <i>Hypomesus transpacificus</i> )	FT, SE	Spawn in shallow fresh or slightly brackish tidally influenced backwater sloughs and channel edges.
Longfin smelt ( <i>Spirinchus thaleichthys</i> )	FC, ST	Spawns in fresh water in the upper end of the San Francisco Bay; occurs year-round in the South Bay. The larvae are swept downstream into brackish water.
Eulachon ( <i>Thaleichthys pacificus</i> )	FT	Spawns in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand and woody debris.
Central California roach ( <i>Hesperoleucus symmetricus symmetricus</i> )	CSSC	Coastal streams to mountain foothill streams; predominately found in small warm streams but are capable of thriving in larger colder streams with diverse conditions
Southern coastal roach ( <i>Hesperoleucus venustus subditus</i> )	CSSC	Found in small warm streams but also in larger colder streams with diverse conditions.
Pacific herring ( <i>Culpea pallasii</i> )	MLMA	Spawns in sheltered areas of bays, estuaries, and harbors, on a variety of substrates including submerged vegetation (e.g., eelgrass beds), cobble, and manmade structures such as pier pilings and riprap.
Invertebrates		
California freshwater shrimp ( <i>Syncaris pacifica</i> )	FE, SE	Occurs in low elevation-low gradient streams, generally with submerged undercut banks, overhanging plants, woody debris, and the exposed live root systems of willow or alder.
Black abalone ( <i>Haliotes cracheriodii</i> )	FE	Rocky intertidal zone and ocean waters
White abalone ( <i>Haliotes sorenseni</i> )	FE	Rocky intertidal zone and ocean waters
Mission blue butterfly ( <i>Icaricia icarioides missionensis</i> )	FE	Shrubs and grasslands with adult nectar plants larval food plants.

Species	Status	Habitat
Myrtle's silverspot butterfly ( <i>Speyeria zerene myrtleae</i> )	FE	Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula in scrub/grassland with adult nectar plants larval food plants.
Monarch butterfly California overwintering population 1 ( <i>Danaus plexippus</i> )	FC	Overwinters on the branches and leaves of trees including Monterey pine ( <i>Pinus radiata</i> ), Monterey cypress ( <i>Cupressus maculata</i> ), and eucalyptus ( <i>Eucalyptus</i> sp.) in areas with appropriate sun exposure and thermal buffering.
Marin elfin butterfly ( <i>Callophrys mossii marinensis</i> )	*	Coastal, mountainous areas with grassy ground cover with adult nectar plants larval food plants.
Point Reyes blue butterfly ( <i>Icaricia icarioides parapheres</i> )	*	Stabilized sand dunes with adult nectar plants larval food plants.
Opler's longhorn moth ( <i>Adela oplerella</i> )	*	Valley & foothill grassland, serpentine
Crotch bumble bee ( <i>Bombus crotchii</i> )		Open grasslands and meadows with sufficient abundance and duration of floral resources for foraging; undisturbed soils, rodent and other animal burrows for nesting and overwintering sites.
Obscure bumble bee ( <i>Bombus caliginosus</i> )	*	Open grasslands and shrublands with sufficient abundance and duration of floral resources for foraging; nests underground in abandoned rodent burrows, and above-ground in tufts of grass, old bird nests, rock piles, or cavities in tree snags.
Western bumble bee ( <i>Bombus occidentalis occidentalis</i> )	*	Meadows and grasslands with sufficient abundance and duration of floral resources; underground rodent or other animal burrows for nesting; may overwinter in friable soils and plant litter or debris.
California linderiella ( <i>Linderiella occidentalis</i> )	*	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions.
Hypoheic amphipod ( <i>Stygobromus hyporheicus</i> )	*	Aquatic habitat
Marin blind Harvestman ( <i>Calicina diminua</i> )	*	Serpentine endemic. Known only from the type locality, Mount Burdell in Novato.
Ubick's gnaphosid spider ( <i>Talanites ubicki</i> )	*	Serpentine endemic. Known only from the type locality, Mount Burdell in Novato.
San Francisco forktail damselfly ( <i>Ischnura gemina</i> )	*	Ponds and ditches
Bumblebee scarab beetle ( <i>Lichnanthe ursina</i> )	*	Slopes on coastal sand dunes near dune vegetation.
Tomales isopod ( <i>Caecidotea tomalensis</i> )	*	Freshwater ponds or streams with still or near-still water
Sandy beach tiger beetle <i>Cicindela hirticollis gravida</i>	*	Coastal dunes in areas adjacent to non-brackish water
Ricksecker's water scavenger beetle ( <i>Hydrochara rickseckeri</i> )	*	Aquatic habitat / pools and ponds, known only from Point Reyes headland
San Francisco Bay Area leaf-cutter bee ( <i>Trachusa gummifera</i> )	*	None available
Globose dune beetle ( <i>Coelus globosus</i> )	*	Foredunes and sand hummocks; burrows beneath the sand surface and is most common beneath dune vegetation.

Species	Status	Habitat
Robust walker ( <i>Pomatiopsis binneyi</i> )	*	Freshwater wetland and streams under leaf litter
Pacific walker ( <i>Pomatiopsis californica</i> )	*	Freshwater habitats
Peninsula coast range shoulderband ( <i>Helminthoglypta nickliniana awania</i> )	*	Coastal scrub habitat and weedy pastures; uniquely adapted to high winds, salt fog, and variable precipitation.
Williams' bronze shoulderband ( <i>Helminthoglypta stiversiana williamsi</i> )	*	Known only from Hog Island and Duck Island, two small, tree-covered islands in Tomales Bay, Marin County.
mimic tryonia (=California brackishwater snail) ( <i>Tryonia imitator</i> )	*	Aquatic, brackish marsh, estuary, lagoon, marsh & swamp, alt marsh, wetland
Tiburon micro-blind harvestman ( <i>Microcina tiburona</i> )	*	Serpentine outcrops near spring/seeps.
Mimic tryonia (=California brackishwater snail) ( <i>Tryonia imitator</i> )	*	Coastal lagoons / estuaries / salt marshes
Marin hesperian ( <i>Vespericola marinensis</i> )	*	Chaparral, meadow & seep, north coast coniferous forest, riparian woodland, found under leaves of cow-parsnip, around spring seeps, in leafmold along streams, in alder woods and mixed evergreen forest.
<b>Amphibians</b>		
California red-legged frog ( <i>Rana draytonii</i> )	FT, CSSC	Inhabits lowlands and foothills in or near permanent or nearly permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Estivates in animal burrows, woody debris, and other moist refuges.
Northern red-legged frog ( <i>Rana aurora</i> )	CSSC	Forests / woodlands / grasslands along streamsides
Foothill yellow-legged frog ( <i>Rana boylei</i> )	SE, CSSC	Inhabits partly shaded, shallow streams and rifles with a rocky substrate in valley and foothill hardwood, riparian, mixed conifer, coastal scrub, mixed chaparral, and wet meadows.
California tiger salamander Sonoma County DPS ( <i>Ambystoma californiense</i> , pop. 3)	FE, ST	Vernal or temporary pools in annual grasslands or open woodlands.
California giant salamander ( <i>Dicamptodon ensatus</i> )	CSSC	Adults occur in wet forests under rocks and logs near streams and lakes. Larvae found in cold, clear streams, occasionally in lakes and ponds.
Western spadefoot toad ( <i>Spea hammondi</i> )	CSSC	Grasslands / open woodlands with seasonal pools
<b>Reptiles</b>		
Northwestern pond turtle ( <i>Emys marmorata</i> )	CSSC	Ponds, marshes, rivers, streams, and irrigation canals. Requires basking sites. Nests in upland habitats, in clay or silty soils typically within 600 feet of aquatic habitat.
California horned lizard ( <i>Phrynosoma coronatum frontale</i> )	CSSC	Forests / woodlands / grasslands with loose soil
Green sea turtle ( <i>Chelonia mydas</i> )	FT	Open ocean
Loggerhead sea turtle ( <i>Caretta caretta</i> )	FE	Open ocean

Species	Status	Habitat
Leatherback sea turtle ( <i>Dermochelys coriacea</i> )	FE	Open ocean
Olive (=Pacific) ridley sea turtle ( <i>Lepidochelys olivacea</i> )	FT	Open ocean
Birds		
Northern spotted owl ( <i>Strix occidentalis caurina</i> )	FT, ST	Dense forest and woodland habitats. Breeding sites include trees or snag cavities or broken tops of large trees.
Swainson's hawk ( <i>Buteo swainsoni</i> )	ST	Large, open grasslands with suitable nest trees such as oaks or cottonwoods in or near riparian habitats; forages in grasslands, lightly grazed pastures/crops, irrigated pastures, and grain fields.
Osprey ( <i>Pandion haliaetus</i> )	CSSC (nesting)	Nesting in trees associated with waterbodies
Western yellow-billed cuckoo ( <i>Coccyzus americanus occidentalis</i> )	FT, SE	Require dense wooded habitat with water nearby, including woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes.
California least tern ( <i>Sterna antillarum browni</i> )	FE, SE	Nests along the coast on bare or sparsely vegetated, flat substrates.
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	SE, CFP	Nests within one mile of water often by lake margins, near rivers or along the ocean shoreline. Nests in large, dominant trees with open branches.
White-tailed kite ( <i>Elanus leucurus</i> )	CFP	Nests in open grasslands/marshlands with scattered trees. Forages in grasslands, marshes, and ruderal habitats.
American peregrine falcon ( <i>Falco peregrinus anatum</i> )	CFP	Nests on ledges and caves on steep cliffs, and on human-made structures such as electrical transmission lines, building ledges, and bridges.
Golden eagle ( <i>Aquila chrysaetos</i> )	CFP	Nests in cliff-walled canyons and large trees in open areas.
Tricolored blackbird ( <i>Agelaius tricolor</i> )	ST, SSC	Nests in freshwater marsh in tall wetland vegetation and nearby upland areas with tall herbaceous species. Often nests near fresh water.
Northern harrier ( <i>Circus hudsonius</i> )	CSSC (nesting)	Nests in marsh and low shrubs.
Long-eared owl ( <i>Asio otus</i> )	CSSC (nesting)	Dense riparian and coast live oak ( <i>Quercus agrifolia</i> ) thickets near meadow edges, and nearby woodland and forest habitats, and sometimes dense conifer stands at higher elevations.
Burrowing owl ( <i>Athene cunicularia</i> )	CSSC	Nests and roosts in open grasslands and ruderal habitats with suitable burrows, usually those made by California ground squirrels ( <i>Spermophilus beecheyi</i> ).
Short-eared owl ( <i>Asio flammeus</i> )	CSSC	Found in marshes, lowland meadows, and irrigated alfalfa fields. Tule patches or dense grass needed for nesting and cover.
Salt marsh common yellowthroat ( <i>Geothlypis trichas sinuosa</i> )	CSSC	Breeds in tall herbaceous vegetation usually in brackish marshes and freshwater marshes. May nest in salt marshes with tall vegetation.
San Pablo song sparrow ( <i>Melospiza melodia samuelis</i> )	CSSC	Tidal, brackish or salt marshes.

<b>Species</b>	<b>Status</b>	<b>Habitat</b>
Bryant's savannah sparrow ( <i>Passerculus sandwichensis alaudinus</i> )	CSSC	Moist coastal upland grasslands within and just above the fog belt in salt marshes and Bayshore areas in pickleweed, pickleweed-grassland ecotone, and above cordgrass stands.
Yellow warbler ( <i>Setophaga petechia</i> )	CSSC	Nests in riparian habitat with mature canopy and dense shrubby understory.
Vaux's Swift ( <i>Chaetura vauxi</i> )	CSSC (nesting)	Nests in cavities in redwoods and other trees, and occasionally in artificial cavities such as chimneys.
Black swift ( <i>Cypseloides niger</i> ) (nesting)	CSSC	Nesting on cliffs and behind falls
Purple martin ( <i>Progne subis</i> )	CSSC (nesting)	Inhabits woodlands, low elevation coniferous forest. Nests in old woodpecker cavities, or human-made structures, tree snags.
Loggerhead shrike ( <i>Lanius ludovicianus</i> )	CSSC (nesting)	Open grasslands, fields, and woodlands. Typically nests in dense willow thickets, blackberry brambles, and eucalyptus trees, among other species.
Grasshopper sparrow ( <i>Ammodramus savannarum</i> )	CSSC (nesting)	Nests in extensive open, meadows, fallow fields, and pastures with native bunchgrasses or annual grasses, with scattered shrubs for perching and singing. Requires bare ground in nesting habitat to escape predators and to forage.
San Pablo song sparrow ( <i>Melospiza melodia samuelis</i> )	CSSC	Tidal salt marsh. Requires dense vegetation for nesting sites, song perches, and cover from predators.
Western snowy plover ( <i>Charadrius nivosus nivosus</i> )	FT, CSSC	Nests on sand spits, dune-backed beaches, lagoon margins, and bluff-backed beaches.
Yellow rail ( <i>Coturnicops noveboracensis</i> )	CSSC	Require sedge marshes/meadows with moist soil or shallow standing water (CDFW).
California black rail ( <i>Laterallus jamaicensis coturniculus</i> )	ST, FP	High marsh in coastal and inland areas. Nests primarily in pickleweed and cordgrass marshes.
California Ridgway's rail ( <i>Rallus obsoletus obsoletus</i> )	FE, SE, CFP	Salt and brackish marshes with dense vegetation, intertidal mudflats, and intersected by tidal sloughs and secondary channels.
Great egret ( <i>Ardea alba</i> ) (rookery)	*	Nests colonially large trees
Great blue heron ( <i>Ardea herodias</i> ) (rookery)	*	Nests colonially in trees, cliff-sides, marshes
Snowy egret ( <i>Egretta thula</i> ) (rookery)	*	Nests colonially in trees, cliff-sides, near marshland
Black-crowned night-heron ( <i>Nycticorax nycticorax</i> ) (rookery)	*	Nests colonially in trees / shrubs near marshland
California brown pelican ( <i>Pelecanus occidentalis californicus</i> )	CFP	Coastal / bay shorelines and open water
Marbled murrelet ( <i>Brachyramphus marmoratus</i> )	FT, SE	Old growth forest / coastal estuaries / open ocean
Tufted puffin ( <i>Fratercula cirrhata</i> )	CSSC	Colonial nester on off-shore islands / cliffs
Short-tailed albatross ( <i>Phoebastria albatrus</i> )	FE	Forages widely across the north Pacific. Nests on two islands in Japan. Known from waters off the coast in Marin County.
Ashy storm-petrel ( <i>Hydrobates homochroa</i> ) (rookery)	CSSC	Nests colonially on off-shore islands
Mammals		

Species	Status	Habitat
Salt marsh harvest mouse ( <i>Reithrodontomys raviventris</i> )	FE, SE, CFP	Diked and tidal wetlands supporting a mix of halophytic vegetation.
Southern sea otter ( <i>Enhydra lutris nereis</i> )	FT, FP, MMC	Protected deepwater coastal communities; needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.
Point Reyes jumping mouse ( <i>Zapus trinotatus orarius</i> )	CSSC	Primarily in bunch grass marshes on the uplands of Point Reyes. Also present in coastal scrub, grassland, and meadows.
Stellar sea lion - western population ( <i>Eumetopias jubatus</i> )	FE, MMC	Open ocean, beaches.
Guadalupe fur seal ( <i>Arctocephalus townsendi</i> )	FT, ST, FP	Open ocean, beaches.
Angel Island mole ( <i>Scapanus latimanus isularis</i> )	*	Coastal scrub / prairie on Angel Island
American badger ( <i>Taxidea taxus</i> )	CSSC	Open grassland or grassland/sparse shrubby habitats with friable soils. Infrequently found in disked agricultural areas.
Point Reyes mountain beaver ( <i>Aplodontia rufa phaea</i> )	CSSC	North-facing slopes in moderately dense coastal scrub and sometimes in openings of Bishop pine ( <i>Pinus muricata</i> ) or Douglas fir ( <i>Pseudotsuga menziesii</i> ) forests.
Pallid bat ( <i>Antrozous pallidus</i> )	CSSC	Roosts in caves, rock outcrops, buildings, bridges, and trees hollows, cavities, and crevices. Forages over a variety of habitats.
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )	CSSC	Roosts in caves, lava tubes, mine tunnels, and occasionally in basal hollows of trees such as redwoods, abandoned buildings, bridges with cave-like in a variety of habitats.
Western red bat ( <i>Lasiurus blossevillii</i> )	CSSC	Roosts in foliage in forest or woodlands, especially in or near riparian habitat.
Greater western mastiff-bat ( <i>Eumops perotis californicus</i> )	CSSC	Cliff-dwelling species, roost in exfoliating rock slabs (e.g., granite, sandstone or columnar basalt), crevices in large boulders and buildings high above the ground
Silver-haired bat ( <i>Lasionycteris noctivagans</i> )	*	Primarily roosts in trees, rarely in tree hollows, cavities, and behind loose bark of large diameter trees and snags
Hoary bat ( <i>Lasiurus cinereus</i> )	*	Roosts primarily in foliage of both coniferous and deciduous trees, usually on the edge of clearings, atypical non-tree roosts (e.g., include tree cavities, squirrel nests, side of a building)
Long-eared myotis bat ( <i>Myotis evotis</i> )	*	Semiarid shrublands, sage, chaparral, and agricultural areas, and coniferous forests in exfoliating tree bark, tree hollows, mines, cliff crevices, rocky outcrops, buildings and bridges
Fringed myotis bat ( <i>Myotis thysanodes</i> )	*	Roosts in crevices in buildings, underground mines, rocks, cliff faces, and bridges, trees and snags
Long-legged myotis bat ( <i>Myotis volans</i> )	*	Roosts in abandoned buildings, cracks in the ground, cliff crevices, exfoliating tree bark, and hollows within snags caves and mine tunnels
Yuma myotis bat ( <i>Myotis yumanensis</i> )	*	Riparian obligate; roosts in bridges, buildings, cliff crevices, caves, mines, and trees.

\*Status Designations

Federal: FE = Listed as endangered under the Federal Endangered Species Act  
FT = Listed as threatened under the Federal Endangered Species Act

FC = Candidate for listing under the Federal Endangered Species Act

State:

SE = Listed as endangered under the California Endangered Species Act

ST = Listed as threatened under the California Endangered Species Act

SC = Candidate for listing under the California Endangered Species Act

CSSC = California Species of Special Concern

CFP = California Fully Protected Species

MLMA = Marine Life Management Act State Regulated Fishery

MMCM = Marine Mammal Commission: Marine Mammal Species of Special Concern

\*Species with an asterisk are considered to meet the definition of special-status because they are maintained on the CDFG list of Special Animals or Special Plants and have a CNDDDB Element Ranking of 3 or less, or the CDFG has indicated that they may be of a relatively common bird species but their communal roost locations are considered a sensitive resource by the CDFG.



## **Appendix E: Supplemental Historical Resources Information**

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State Historical Resources Commission, California Register of Historic Places (CRHR)  
**CALIFORNIA HISTORICAL RESOURCES—MARIN COUNTY<sup>1</sup>**

<b>Name and Landmark Plaque Number</b>	<b>City/County</b>	<b>Date Listed</b>	<b>Type</b>
Alexander Bailey House "The Gables" (P674)	Inverness	9/2/86	PI
Alexander-Acacia Bridge (N1262)	Larkspur	1/5/84	NR
Angel Island (529)	Angel Island	3/7/55	CR
Angel Island, U.S. Immigration Station (N118)	Tiburon	10/14/71	NR
Barrett, William G., House (N881)	Sausalito	6/17/80	NR
Boyd House (N317)	San Rafael	12/17/74	NR
Bradford House (N871)	San Rafael	6/6/80	NR
Camilo Ynitia Adobe (210)	Novato	6/20/35	CR
China Camp (924)	Santa Venetia	12/7/78	CR
China Camp (N765)	San Rafael	4/26/79	NR
Dixie Schoolhouse (N199)	San Rafael	12/26/72	NR
Dollar, Robert, Estate (N195)	San Rafael	12/11/72	NR
Dollar, Robert, House (N1705)	San Rafael	7/23/91	NR, PI
Dolliver House (N612)	Larkspur	5/22/78	NR
Fashion Shop and Stephen Porcella House (N886)	Novato	6/25/80	NR
First Sawmill in Marin County (207)	Marin County	6/20/35	CR
Fort's Baker, Barry, and Cronkhite (N267)	Sausalito	12/12/73	NR
Golden Gate Bridge (974)	Marin County	6/18/87	CR
Green Brae Brick Kiln (917)	Larkspur	1/31/78	CR
Green Brae Brick Yard (N565)	Larkspur	3/24/78	NR
Griswold House (N1377)	Sausalito	9/12/85	NR
Hamilton Army Air Field Discontiguous Historic District (N2039)	Novato	11/20/98	NR
Home of Lord Charles Snowden Fairfax (679)	Fairfax	5/11/59	CR
Larkspur Downtown Historic District (N1136)	Larkspur	10/7/82	NR
Lime Kilns (222)	Olema	6/20/35	CR
Lyford's Stone Tower (N454)	Tiburon	12/2/76	NR
Lyford, Benjamin and Hilarita, House (N2110)	Tiburon	11/10/2000	NR
Marin County Civic Center (999)	San Rafael	5/8/91	NR, CR
McNear, Erskine, B., House (N988)	San Rafael	1/11/82	NR
Miller Creek School Indian Mound (N119)	San Rafael	10/14/71	NR
Mission San Rafael Arcángel (220)	San Rafael	6/20/35	CR
Muir Beach Archeological Site (N937)	Marin City	1/26/81	NR
Old St. Hilary's Church (P92)	Tiburon	6/7/68	PI
Olema Lime Kilns (N441)	Olema	10/8/76	NR
Outdoor Art Club (922)	Mill Valley	10/15/78	NR, CR
Pierce Ranch (N1406)	Inverness	12/6/85	NR
Pioneer Memorial Cemetery (P785)	Novato	5/19/93	PI

<b>Name and Landmark Plaque Number</b>	<b>City/County</b>	<b>Date Listed</b>	<b>Type</b>
Pioneer Paper Mill (552),	Lagunitas	6/4/56	CR
Plaza Vina del Mar (P476)	Sausalito	4/2/76	PI
Point Bonita Light Station (N1721)	Sausalito	9/3/91	NR
Point Reyes Lifeboat Rescue Station, 1927 (N1402)	Inverness	11/7/85	NR
Point Reyes Light Station (N1722)	Point Reyes	9/3/91	NR
Rancho Olompali (N202)	Novato	1/12/73	NR
Rey, Valentine, House (N1093)	Belvedere	4/22/82	NR
San Francisco and North Pacific Railroad Station House--Depot (N1916)	Tiburon	8/4/95	NR
San Rafael Improvement Club (N1274)	San Rafael	3/29/84	NR
Sausalito Woman's Club (N1827)	Sausalito	4/15/93	NR
Schreiber, Brock, Boathouse and Beach (N640)	Inverness	7/7/78	NR
Site of the Lighter Wharf at Bolinas (221)	Bolinas	6/20/35	CR
St. Vincent's School for Boys (630)	San Rafael	1/29/58	CR
Station KPH Operating Station (N1604)	Marshall	7/24/89	NR
Station KPH, Marconi Wireless Telegraph Company of America (N1605)	Marshall	7/24/89	NR
Steamship Tennessee Remains (N956)	Marin City	4/15/81	NR
Tomales Presbyterian Church and Cemetery (N381)	Tomales	8/1/75	NR
Vina Del Mar Park Plaza and Fountain (P477)	Sausalito	4/2/76	PI

SOURCE: State of California, Office of Historic Preservation, June 2022.  
[web site: <https://ohp.parks.ca.gov/listedresources/>, accessed 6/5/22]

Type:

NR = National Register of Historic Places

CR = California Register of Historical Resources

PI = Point of Interest

<sup>1</sup> The resources in this table were listed by the State Historical Resources Commission and may not include all resources listed in the CRHR; the appropriate regional Information Center should be contacted for a complete list of Marin County resources listed in the CRHR.

Reference Number	Property Name	Status	Request Type	Restricted Address	Category of Property	State
82002203	Rey, Valentine, House	Listed	Single	FALSE	BUILDING	CALIFORNIA
100002108	Marconi-RCA Bolinas Transmitting Station	Listed	Single	FALSE	district	CALIFORNIA
78000702	Schreiber, Brock, Boathouse and Beach	Listed	Single	FALSE	BUILDING	CALIFORNIA
85002756	Point Reyes Lifeboat Rescue Station, 1927	Listed	Single	FALSE	DISTRICT	CALIFORNIA
85003324	Pierce Ranch	Listed	Single	FALSE	DISTRICT	CALIFORNIA
100002109	RCA Point Reyes Receiving Station	Listed	Single	FALSE	district	CALIFORNIA
100002147	Point Reyes Peninsula Dairy Ranches Historic District	Listed	Resubmission	FALSE	district	CALIFORNIA
100002619	Point Reyes Naval Radio Compass Station	Listed	Single	FALSE	building	CALIFORNIA
78000703	Dolliver House	Listed	Single	FALSE	BUILDING	CALIFORNIA
78000704	Green Brae Brick Yard	Listed	Single	FALSE	STRUCTURE	CALIFORNIA
82000972	Larkspur Downtown Historic District	Listed	Single	FALSE	DISTRICT	CALIFORNIA
84000903	Alexander-Acacia Bridge	Listed	Single	FALSE	STRUCTURE	CALIFORNIA
81000097	Muir Beach Archeological Site	Listed	Single	TRUE	SITE	CALIFORNIA
81000102	Steamship TENNESSEE Remains	Listed	Single	TRUE	SITE	CALIFORNIA
100001604	Marin City Public Housing	Listed	Single	FALSE	district	CALIFORNIA
88003223	Station KPH, Marconi Wireless Telegraph Company of America	Listed	Single	FALSE	DISTRICT	CALIFORNIA
89000819	Station KPH Operating Station	Listed	Single	FALSE	BUILDING	CALIFORNIA
07001396	Muir Woods National Monument	Listed	Single	FALSE	DISTRICT	CALIFORNIA
11000934	West Point Inn	Listed	Single	FALSE	BUILDING	CALIFORNIA
14001234	Mount Tamalpais Mountain Theater	Listed	Multiple	FALSE	STRUCTURE	CALIFORNIA
78000705	Outdoor Art Club	Listed	Single	FALSE	BUILDING	CALIFORNIA
10000356	Dipsea Trail, The	Listed	Single	FALSE	STRUCTURE	CALIFORNIA
73000409	Rancho Olompali	Listed	Single	TRUE	SITE	CALIFORNIA
80000817	Fashion Shop and Stephen Porcella House	Listed	Single	FALSE	BUILDING	CALIFORNIA
98001347	Hamilton Army Air Field Discontiguous Historic District	Listed	Single	FALSE	DISTRICT	CALIFORNIA
76000217	Olema Lime Kilns	Listed	Single	FALSE	STRUCTURE	CALIFORNIA
100002286	Olema Valley Dairy Ranches Historic District	Listed	Single	FALSE	district	CALIFORNIA
91001100	Point Reyes Light Station	Listed	Multiple	FALSE	DISTRICT	CALIFORNIA
12001006	Drakes Bay Historic and Archeological District	Listed	Single	TRUE	DISTRICT	CALIFORNIA
71000163	Miller Creek School Indian Mound	Listed	Single	TRUE	SITE	CALIFORNIA
72000236	Dixie Schoolhouse	Listed	Single	FALSE	BUILDING	CALIFORNIA
72000237	Dollar, Robert, Estate	Listed	Single	FALSE	BUILDING	CALIFORNIA
74000528	Boyd House	Listed	Single	FALSE	BUILDING	CALIFORNIA
79000493	China Camp	Listed	Single	FALSE	DISTRICT	CALIFORNIA
80000818	Bradford House	Listed	Single	FALSE	BUILDING	CALIFORNIA
82002204	McNear, Erskine, B., House	Listed	Single	FALSE	BUILDING	CALIFORNIA
84000907	San Rafael Improvement Club	Listed	Single	FALSE	BUILDING	CALIFORNIA
91000920	Dollar, Robert, House	Listed	Single	FALSE	BUILDING	CALIFORNIA
91002055	Marin County Civic Center	Listed	Single	FALSE	BUILDING	CALIFORNIA
16000865	Marinship Machine Shop	Listed	Single	FALSE	building	CALIFORNIA
73000255	Forts Baker, Barry, and Cronkhite	Listed	Single	FALSE	DISTRICT	CALIFORNIA
80004490	Barrett, William G., House	Listed	Single	FALSE	BUILDING	CALIFORNIA
85002306	Griswold House	Listed	Single	FALSE	BUILDING	CALIFORNIA
91001099	Point Bonita Light Station	Listed	Multiple	FALSE	DISTRICT	CALIFORNIA
93000272	Sausalito Woman's Club	Listed	Single	FALSE	BUILDING	CALIFORNIA
00001268	Lyford, Benjamin and Hilarita, House	Listed	Single	FALSE	BUILDING	CALIFORNIA
71000164	Angel Island, U.S. Immigration Station	Listed	Single	FALSE	DISTRICT	CALIFORNIA
76000497	Lyford's Stone Tower	Listed	Single	FALSE	BUILDING	CALIFORNIA
95000997	San Francisco and North Pacific Railroad Station House-Depot	Listed	Single	FALSE	BUILDING	CALIFORNIA
100004935	St. Hilary's Mission Church	Listed	Single	FALSE	building	CALIFORNIA
100002959	Tocaloma Bridge	Listed	Single	FALSE	structure	CALIFORNIA
75000437	Tomales Presbyterian Church and Cemetery	Listed	Single	FALSE	BUILDING	CALIFORNIA

County	City	Street & Number	External Link
Marin	Belvedere	428 Golden Gate Ave.	<a href="https://catalog.archives.gov/id/123859705">https://catalog.archives.gov/id/123859705</a>
Marin	Bolinas	Mesa Road; Point Reyes National Seashore.	
Marin	Inverness	12830 Sir Francis Drake Blvd.	<a href="https://catalog.archives.gov/id/123859713">https://catalog.archives.gov/id/123859713</a>
Marin	Inverness	Drake's Bay, Point Reyes National Seashore	<a href="https://catalog.archives.gov/id/123857956">https://catalog.archives.gov/id/123857956</a>
Marin	Inverness	Point Reyes National Seashore	<a href="https://catalog.archives.gov/id/123859700">https://catalog.archives.gov/id/123859700</a>
Marin	Inverness	17400 Sir Francis Drake Blvd.; Point Reyes National Seashore	
Marin	Inverness	Point Reyes NS	
Marin	Inverness	23250 Sir Francis Drake Blvd.	
Marin	Larkspur	58 Madrone Ave.	<a href="https://catalog.archives.gov/id/123859672">https://catalog.archives.gov/id/123859672</a>
Marin	Larkspur	125 E. Sir Francis Drake Blvd.	<a href="https://catalog.archives.gov/id/123859678">https://catalog.archives.gov/id/123859678</a>
Marin	Larkspur	234-552 1/2 Magnolia Ave.	<a href="https://catalog.archives.gov/id/123859684">https://catalog.archives.gov/id/123859684</a>
Marin	Larkspur	Alexander Ave. between Acacia and Monte Vista Aves.	<a href="https://catalog.archives.gov/id/123859652">https://catalog.archives.gov/id/123859652</a>
Marin	Marin City	Address Restricted	
Marin	Marin City	Address Restricted	
Marin	Marin City	101-429 Drake Ave., 1-99 Cole Dr.	
Marin	Marshall	18500 CA 1	<a href="https://catalog.archives.gov/id/123859717">https://catalog.archives.gov/id/123859717</a>
Marin	Marshall	18500 CA 1	<a href="https://catalog.archives.gov/id/123859715">https://catalog.archives.gov/id/123859715</a>
Marin	Mill Valley	Muir Woods Rd.	<a href="https://catalog.archives.gov/id/123859694">https://catalog.archives.gov/id/123859694</a>
Marin	Mill Valley	Old RR grade, Mt. Tamalpais	<a href="https://catalog.archives.gov/id/123859722">https://catalog.archives.gov/id/123859722</a>
Marin	Mill Valley	3801 Panoramic Hwy.	
Marin	Mill Valley	1 W. Blithedale Ave.	<a href="https://catalog.archives.gov/id/123859698">https://catalog.archives.gov/id/123859698</a>
Marin	Mill Valley and Stinson Beach	Throckmorton Ave, Sequoia Valley Rd., Panoramic Hwy., State Rt 1, Muir Woods National Monument, Golden Gate	<a href="https://catalog.archives.gov/id/123859664">https://catalog.archives.gov/id/123859664</a>
Marin	Novato	Address Restricted	
Marin	Novato	800 Grant Ave. and 1009 Reichert Ave.	<a href="https://catalog.archives.gov/id/123859674">https://catalog.archives.gov/id/123859674</a>
Marin	Novato	Mostly the SW part of Hamilton Army Air Field	<a href="https://catalog.archives.gov/id/123859682">https://catalog.archives.gov/id/123859682</a>
Marin	Olema	4 mi. SE of Olema on CA 1	<a href="https://catalog.archives.gov/id/123859696">https://catalog.archives.gov/id/123859696</a>
Marin	Olema	Point Reyes NS & Golden Gate NRA	
Marin	Point Reyes	Point Reyes National Seashore	<a href="https://catalog.archives.gov/id/123857643">https://catalog.archives.gov/id/123857643</a>
Marin	Point Reyes Station	Address Restricted	
Marin	San Rafael	Address Restricted	
Marin	San Rafael	2255 Las Gallinas Ave.	<a href="https://catalog.archives.gov/id/123859666">https://catalog.archives.gov/id/123859666</a>
Marin	San Rafael	1408 Mission Ave.	<a href="https://catalog.archives.gov/id/123859668">https://catalog.archives.gov/id/123859668</a>
Marin	San Rafael	1125 B St.	<a href="https://catalog.archives.gov/id/123859658">https://catalog.archives.gov/id/123859658</a>
Marin	San Rafael	247 N. San Pedro Dr.	<a href="https://catalog.archives.gov/id/123859662">https://catalog.archives.gov/id/123859662</a>
Marin	San Rafael	333 G St.	<a href="https://catalog.archives.gov/id/123859660">https://catalog.archives.gov/id/123859660</a>
Marin	San Rafael	121 Knight Dr.	<a href="https://catalog.archives.gov/id/123859690">https://catalog.archives.gov/id/123859690</a>
Marin	San Rafael	1800 5th Ave.	<a href="https://catalog.archives.gov/id/123859709">https://catalog.archives.gov/id/123859709</a>
Marin	San Rafael	115 J St.	<a href="https://catalog.archives.gov/id/123859670">https://catalog.archives.gov/id/123859670</a>
Marin	San Rafael	Jct. of N. San Pedro Rd. and Civic Center Dr.	<a href="https://catalog.archives.gov/id/123857954">https://catalog.archives.gov/id/123857954</a>
Marin	Sausalito	25 Liberty Ship Way	
Marin	Sausalito	S of Sausalito off U.S. 101	<a href="https://catalog.archives.gov/id/123859676">https://catalog.archives.gov/id/123859676</a>
Marin	Sausalito	156 Bulkley	<a href="https://catalog.archives.gov/id/123859656">https://catalog.archives.gov/id/123859656</a>
Marin	Sausalito	639 Main St.	<a href="https://catalog.archives.gov/id/123859680">https://catalog.archives.gov/id/123859680</a>
Marin	Sausalito	Point Bonita	<a href="https://catalog.archives.gov/id/123857641">https://catalog.archives.gov/id/123857641</a>
Marin	Sausalito	120 Central Ave.	<a href="https://catalog.archives.gov/id/123859711">https://catalog.archives.gov/id/123859711</a>
Marin	Tiburon	376 Greenwood Beach Rd.	<a href="https://catalog.archives.gov/id/123859686">https://catalog.archives.gov/id/123859686</a>
Marin	Tiburon	SE of Tiburon in San Francisco Bay	<a href="https://catalog.archives.gov/id/123859654">https://catalog.archives.gov/id/123859654</a>
Marin	Tiburon	2034 Paradise Dr.	<a href="https://catalog.archives.gov/id/123859688">https://catalog.archives.gov/id/123859688</a>
Marin	Tiburon	1920 Paradise Dr.	<a href="https://catalog.archives.gov/id/123859707">https://catalog.archives.gov/id/123859707</a>
Marin	Tiburon	201 Esperanza St.	
Marin	Tocaloma	Old segment of Sir Francis Drake Blvd. across Lagunitas Cr.	
Marin	Tomaes	11 Church St.	<a href="https://catalog.archives.gov/id/123859720">https://catalog.archives.gov/id/123859720</a>

Federal Agencies	Level of Significance - International	Level of Significance - Local	Level of Significance - National	Level of Significance - Not Indicated	Level of Significance - State	Listed Date
	False	False	False	False	True	4/22/1982
NATIONAL PARK SERVICE	False	True	True	False	False	2/23/2018
	False	True	False	False	False	7/7/1978
NATIONAL PARK SERVICE	False	False	True	False	True	11/7/1985
NATIONAL PARK SERVICE	False	False	False	False	True	12/6/1985
NATIONAL PARK SERVICE	False	True	True	False	False	2/23/2018
NATIONAL PARK SERVICE	False	True	False	False	False	10/29/2018
NATIONAL PARK SERVICE	False	True	False	False	False	6/29/2018
	False	True	False	False	False	5/22/1978
	False	False	False	False	True	3/24/1978
	False	True	False	False	False	10/7/1982
	False	True	False	False	False	1/5/1984
NATIONAL PARK SERVICE	False	True	False	False	False	1/26/1981
NATIONAL PARK SERVICE	False	True	False	False	False	4/15/1981
	False	True	False	False	False	9/18/2017
	False	False	True	False	False	7/24/1989
	False	False	True	False	False	7/24/1989
NATIONAL PARK SERVICE	False	False	True	False	False	1/9/2008
	False	True	False	False	False	12/22/2011
	False	True	False	False	False	2/2/2015
	False	True	False	False	False	11/16/1978
NATIONAL PARK SERVICE	False	True	False	False	False	6/4/2010
	False	False	False	False	True	1/12/1973
	False	True	False	False	False	6/25/1980
DEPARTMENT OF THE NAVY	False	True	False	False	False	11/20/1998
NATIONAL PARK SERVICE	False	False	False	False	True	10/8/1976
NATIONAL PARK SERVICE	False	True	False	False	False	4/9/2018
COAST GUARD	False	False	False	False	True	9/3/1991
	False	False	True	False	False	10/16/2012
	False	False	False	False	True	10/14/1971
	False	True	False	False	False	12/26/1972
	False	True	False	False	False	12/11/1972
	False	True	False	False	False	12/17/1974
	False	False	True	False	False	4/26/1979
	False	True	False	False	False	6/6/1980
	False	True	False	False	False	1/11/1982
	False	True	False	False	False	3/29/1984
	False	True	False	False	False	7/23/1991
U.S. POSTAL SERVICE	False	False	True	False	False	7/17/1991
	False	True	False	False	False	12/20/2016
NATIONAL PARK SERVICE; DEPARTMENT OF THE ARM	False	False	False	False	True	12/12/1973
	False	True	False	False	False	6/17/1980
	False	True	False	False	False	9/12/1985
COAST GUARD	False	False	False	False	True	9/3/1991
	False	True	False	False	False	4/15/1993
	False	True	False	False	False	11/10/2000
	False	False	False	False	True	10/14/1971
	False	True	False	False	False	12/2/1976
	False	True	False	False	False	8/4/1995
	False	True	False	False	False	2/3/2020
NATIONAL PARK SERVICE	False	True	False	False	False	9/14/2018
	False	True	False	False	False	8/1/1975

Name of Multiple Property Listing	NHL Designated Date	Other Names	Park Name
		Station KPH	Point Reyes
		Brock's Boathouse;The Boathouse	
	12/20/1989	Point Reyes Lifeboat Station	Point Reyes
		Upper Pierce Point Ranch	Point Reyes
			Point Reyes
		A, B, C, D, E, F, G, R Home.1 J. K, L, M, N, Rogers, and W Ranche	Point Reyes
		Point Reyes Naval Direction Finder Station	Point Reyes
		Remillard Brick Kiln	
		Old Downtown Larkspur	
		Alexander Avenue Overhead;Bridge No. 27C-150	
		4-Mrn-33	Golden Gate
			Golden Gate
		Golden Gate Village	
		Marconi Property	
		Marconi Property	
		Muir Woods National Monument Historic District	Muir Woods
National-State Cooperative Program and the CCC in California State Parks MPS		Sydney B. Cushing Amphitheater; Facility Number D3082001	
			Golden Gate
		Coast Miwok Indian Village	
		Stephen Porcella House and "Fashion Shop"	
		Hamilton Field;Hamilton Army Air Force Base	
			Point Reyes
		Cheda Ranch; DeSouza Ranch; Edwin Gallagher Ranch; Genazzi	Point Reyes
Light Stations of California MPS		Point Reyes Lighthouse	
	10/16/2012		
		4 MRN.138	
		The Dixie School	
		Walker, James D., Home; Dollar, Robert, Home; "Falkirk"	
		The Gate House	
		China Camp State Park	
		Bradford Manor;Bradford/Sharp House	
		McNear House	
	7/17/1991		
		Building 11	
		Lime Point Tract Reservation;Tennessee Point Military Reserv	Golden Gate
		Casa Madrona Hotel	
Light Stations of California MPS			
	12/9/1997		
		Lyford's Tower-The Stone Tower-The Castle-Stone Lodge	
		Donahue, Peter, Building;Northwestern Pacific Railroad Depot	
		St. Hilary's; Old St. Hilary's	
			Point Reyes



## **Appendix F: Supplemental Hazards and Hazardous Materials Information**

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**STATE-LISTED HAZARDOUS MATERIALS SITES IN MARIN COUNTY**

<b>Site/Facility Name<sup>1</sup></b>	<b>Address/Description</b>	<b>Program Type<sup>2</sup></b>	<b>Status<sup>3</sup></b>
<b>DEPARTMENT OF TOXIC SUBSTANCES</b>			
<b>Fort McDowell</b>	4 miles north of San Francisco, Angel Island	State Response	Active
Bolinas Abandoned Landfill	East Shore Bolinas Lagoon, Bolinas	Historical	Refer: RWQCB
Bolinas Military Reservation	1.7 miles northwest of Bolinas on Mesa Road at N 37D 55' 19"; W 122D 43' 10", Bolinas	Military Evaluation	No Further Action
RCA Antenna Farm	451 Mesa Road, Bolinas	Evaluation	Refer: Other Agency
Corte Madera Nellin Avenue Connector	Nellin Avenue at Tamal Vista Drive, Corte Madera	Historical	Refer: Other Agency
Wincup	195 Tamal Vista Boulevard, Corte Madera	Evaluation	No Further Action
<b>Fair Anselm Center, Inc.</b>	709 & 711 Center Boulevard, Fairfax	State Response	Active
Oak Manor Canyon Site	Oak Manor Drive Area, Fairfax	Evaluation	No Further Action
Point Reyes Lighthouse	Inverness	Military Evaluation	No Further Action
Tomales Bay/Abbotts Lagoon Bombing Range (J09CA7292)	11 miles west/northwest of Inverness	Military Evaluation	No Further Action
Larkspur Disposal Site	Piper Park on Doherty Drive, Larkspur	Historical	Refer: RWQCB
Niven Nursery Site	2 Ward Street, Larkspur	Voluntary Cleanup	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Ross Valley Sanitary District	2000 Larkspur Landing Circle, Larkspur	Evaluation	No Further Action
Fort Cronkite	Marin County	Military Evaluation	No Further Action
Commodore Helicopters	240 Bolinas Avenue, Mill Valley	Historical	Refer: Other Agency
Graham's Garage	228 Almont, Mill Valley	Historical	Refer: Other Agency
Mill Valley Landfill	Cypress and Edgewood Road, Mill Valley	Evaluation	Refer: Other Agency
Mill Valley Middle School	425 Sycamore, Mill Valley	Evaluation	Refer: Other Agency
Think Clean Cleaners	389 Miller Avenue, Mill Valley	Voluntary Cleanup	Active
Mill Valley AFB	Mount Tamalpais	State Response	Refer: RWQCB
Nicasio School Addition	5555 Nicasio Valley Road, Nicasio	School Investigation	No Action Required
Arnold's Automotive Dismantlers	864 Vallejo Avenue, Novato	Historical	Refer: Other Agency
Bel Marin Keys Unit V	South of Bel Marin Keys Boulevard, Novato	Voluntary Cleanup	Refer: Other Agency
Bill's Texaco Station	200 San Marin Drive, Novato	Historical	Refer: RWQCB
Binford Road Fill Site	Binford and Airport Roads, north & west, Novato	Historical	Refer: Other Agency
Black Point Communications Facility Annex (J09CA0075)	Stonetree Lane, Novato	State Response	Inactive – Action Required
Costco Wholesale #141, Novato	300 Vintage Way, Novato	Tiered Permit	Inactive – Needs Evaluation

Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
Dept. of Defense Housing Facility – Hamilton Square	970 C Street, Novato	State Response	Active – Land Use Restrictions
Former 7th Street Cleaners	936 7th Street, Novato	Voluntary Cleanup	Active
Golden Gate Business Park	Franklin Avenue next to Northwest Pacific Railroad, Novato	Evaluation	No Further Action
Hamilton - Phase II, Contract	Novato	Military Evaluation	Inactive – Needs Evaluation
Hamilton AAF	Novato	Military Evaluation	No Further Action
<b>Hamilton AAF (J09CA7062) (GSA Phase II_LF26) IR</b>	Highway 101; 3 miles north of Lucas Valley Road, Novato	State Response	Certified / Operation & Maintenance
<b>Hamilton AAF – (J09CA7062) - North Antenna Field – IR/MMRP</b>	Highway 101; 3 miles north of Lucas Valley Road, Novato	State Response	Active
Hamilton AAF – Ammo Hill (J09CA7084)	Novato	Military Evaluation	No Further Action
Hamilton AAF – WAF Hill (J09CA7085)	Novato	Military Evaluation	No Further Action
Hamilton Army Airfield – BRAC	Highway 101; 3 miles north of Lucas Valley Road, Novato	State Response	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Hamilton Elementary School Site	State Access Road/C Street, Novato	School Cleanup	Active – Land Use Restrictions
Hamilton GSA Lot 7	Highway 101; 3 miles north of Lucas Valley Road, Novato	State Response	Certified
Hamilton GSA Phase I	Highway 101; 3 miles north of Lucas Valley Road, Novato	State Response	Certified
Hamilton-Phase II, In-House (J09CA7082)	Novato	Military Evaluation	Inactive - Needs Evaluation
Novato Charter School	C Street/Main Gate Road, Novato	School Investigation	No Action Required
Novato City Corporation Yard	550 Davidson Street, Novato	Historical	Refer: Other Agency
Novato Disposal Service	752 McClay Road, Novato	Historical	Refer: Other Agency
Novato DOD Housing	Highway 101 3 miles north of Lucas Valley Road, Novato	State Response	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Novato Storage Park	Airport and Binford Roads, Novato	Voluntary Cleanup	No Further Action
Northwest Pacific Railroad Passenger & Freight Depot, Novato	Railroad Avenue at Grant Street, Novato	Evaluation	Inactive – Needs Evaluation
Omniglow Corporation	20-C Pimentel Court, Novato	Voluntary Cleanup	No Further Action
Pacheco Plaza One Hour Cleaners	446 Ignacio Boulevard, Novato	Voluntary Cleanup	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Rafael Village Family Housing Annex	Novato	Military Evaluation	No Further Action
Redwood Sanitary Landfill	1 miles north of Marin County Airport, adjacent to U.S. 101, Novato	Historical	Refer: RWQCB

Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
Thorssons Auto Center	862 Vallejo Avenue, Novato	Historical	Refer: Other Agency
National Seashore – Wldcat	Olema	Military Evaluation	No Further Action
Borello Ranch Disposal Site – Ponds	West Side of Highway 1 & Millerton Gulch, Point Reyes	Historical	Refer: RWQCB
Gambonini Mine	Northeast of Salmon Creek Tributary to Walker Creek, Point Reyes	Historical	Refer: RWQCB
West Marin Sanitary Landfill	Highway 1 and Tomasini Canyon, Point Reyes	Historical	Refer: RWQCB
Drakes Bay Range – (J09CA7289) MMRP	1 Bear Valley Road (Point Reyes National Seashore), Point Reyes Station	Military Evaluation	Inactive – Needs Evaluation
Point Reyes Gunnery Range	Point Reyes	Military Evaluation	No Further Action
<b>Bolinas Avenue Center</b>	4&8 Bolinas Avenue & 21 San Anselmo Avenue, San Anselmo	State Response	Active
Frank Valley Military Reservation	Muir Beach	Military Evaluation	No Further Action
Point Reyes Datum & Access Road (J09CA0907)	Point Reyes	Military Evaluation	No Further Action
CDCR – San Quentin State Prison	1 Main Street, San Quentin	Haz Waste - RCRA	Closed
San Quentin Condemned Inmate Complex	San Quentin State Prison, San Quentin	Voluntary Cleanup	Inactive – Action Required
San Quentin State Prison	Point San Quentin, San Quentin	Historical	Refer: RWQCB
Aldersly Garden Retirement Community	326 Mission Avenue, San Rafael	Cal-Mortgage	No Action Required
Arrowhead Jewelry #2	616 Canal Street, San Rafael	Historical	Refer: Other Agency
Bahia Vista Elementary School	125 Bahia Way, San Rafael	School Investigation	No Action Required
Baxter Court Property	714 A Francisco Boulevard West, San Rafael	Tiered Permit	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Baxters Court Area	Baxters Court, San Rafael	State Response	Refer: RCRA
Bayview Business Park	Pelican Way & Kerner Avenue, San Rafael	Historical	Refer: RWQCB
Bellam Boulevard Landfill	Bellam Boulevard (at the end), San Rafael	Historical	Refer: Other Agency
Bucks Launching	665 N. San Pedro Road, San Rafael	Historical	Refer: Other Agency
CA Autism Foundation – A Better Chance	371 Devon Drive, San Rafael	Cal-Mortgage	No Action Required
Captains Cove Housing Development	Smith Ranch Road & Gallinas Creek, San Rafael	Historical	Refer: RWQCB
Diesel Energy Incorporated	40 Woodland Avenue, San Rafael	Historical	Refer: Other Agency
Fairchild Discrete Division	4300 Redwood Highway, San Rafael	Historical	Refer: RWQCB
Fairchild Semiconductor Corp	4300 Redwood Highway, San Rafael	Haz Waste	Closed

<b>Site/Facility Name<sup>1</sup></b>	<b>Address/Description</b>	<b>Program Type<sup>2</sup></b>	<b>Status<sup>3</sup></b>
Fairchild Semiconductor Corp	4300 Redwood Highway, San Rafael	Corrective Action	Refer: RWQCB
Former Maxim Gas Plant Office	4th Street between A & B Streets, San Rafael	State Response	No Further Action
Ghilotti Brothers Disposal Site	Francisco Boulevard and Pelican, San Rafael	Historical	Refer: RWQCB
Griese Radiator Repair	10 Baxters Court, San Rafael	Historical	Refer: Other Agency
Horst Hanf Landfill	834 Francisco Boulevard, San Rafael	Historical	Refer: RWQCB
Marin Debris Disposal Site	Sir Francis Drake Blvd, northwest of San Rafael	Historical	Refer: RWQCB
Marin Radiator & Auto Air Conditioning	786 Andersen Drive, San Rafael	Evaluation	Inactive – Needs Evaluation
Marin-Sonoma Mosquito Abatement District	201 3rd Street, San Rafael	Voluntary Cleanup	Certified / Operation & Maintenance – Land Use Restrictions
Marine Corps Reserve Training Center	153 Madison Avenue, San Rafael	Historical	Refer: Other Agency
McPhail's, Inc	548 Dubois Street, San Rafael	Historical	Refer: Other Agency
PG&E Utility Corporation Yard	1220 Andersen Drive, San Rafael	Evaluation	Inactive – Needs Evaluation
PG&E, San Rafael Manufactured Gas Plant	Second Street and Lindaro Street, San Rafael	Voluntary Cleanup	Certified / Operation & Maintenance – Land Use Restrictions
Photo Waste Recycling Co., Inc.	2980 Kerner Boulevard, San Rafael	Haz Waste – Standardized	Closed
San Francisco Nike Battery 93 (J09CA0944)	San Rafael	Military Evaluation	Refer: RWQCB
San Pedro School	498 Point San Pedro Road, San Rafael	Historical	No Further Action
San Quentin Disposal Company	1615 Francisco Boulevard, San Rafael	Historical	Refer: RWQCB
San Rafael Bivouac Area	San Rafael	Military Evaluation	No Further Action
San Rafael Plastics Company	97 Jordan Street, San Rafael	Historical	Refer: RWQCB
San Rafael Rock Quarry	Point San Pedro Road at McNears Point, San Rafael	Historical	Refer: Other Agency
Shoreline Center	111 Shoreline Boulevard, San Rafael	Historical	Refer: Other Agency
Specification Chromium Corporation	14 Baxters Court, San Rafael	Evaluation	Inactive – Needs Evaluation
Specification Chromium Corporation	712 Francisco Boulevard, San Rafael	Tiered Permit	No Further Action
Stinson Beach (Artillery) Fire Control Station (J09CA0959)	Stinson Beach	Military Evaluation	No Further Action
The Car Shop	616 Lindaro Street, San Rafael	Evaluation	No Further Action
Union Oil Co. of California	620 Canal Street, San Rafael	Historical	Refer: RWQCB
Universal Protective Coatings	121-123 Jordan Street, San Rafael	Historical	Refer: RWQCB
Western Chrome Plating and Polishing	11 Baxters Court, San Rafael	Historical	Refer: Other Agency
Western Geological Services	2360-C Kerner Boulevard, San Rafael	Historical	Refer: Other Agency

<b>Site/Facility Name<sup>1</sup></b>	<b>Address/Description</b>	<b>Program Type<sup>2</sup></b>	<b>Status<sup>3</sup></b>
East Fort Baker	91 acres; 2 miles south of Sausalito	State Response	Certified
Fort Baker – IR/MMRP	2 miles south of Sausalito	State Response	Inactive – Action Required
Fort Barry (J09CA3107)	9 miles northwest of San Francisco (in the Golden Gate National Recreation Area), Sausalito	State Response	Inactive – Action Required
Galilee Harbor, Parcel 1	300 Napa Street, Sausalito	Voluntary Cleanup	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
Marinship	Spring Street and Gate 5 Road to the Bay, Sausalito	Evaluation	No Further Action
Northwestern Pacific Railroad	El Portal & Bridgeway, Sausalito	Historical	Refer: Other Agency
Photo Waste Recycling	200 Gate 5 Road, #115, Sausalito	Haz Waste – Standardized	Closed
South Pacific Division Laboratory	25 Liberty Ship Way, Sausalito	State Response	Certified O&M – Land Use Restrictions Only – Land Use Restrictions
U.S. Army – Fort Barry	Golden Gate National Recreation Area, Sausalito	Historical	Refer: RWQCB
U.S. Army – Fort Cronkhite	Golden Gate National Recreation Area, Sausalito	Historical	Refer: RWQCB
U.S. Army – Fort Mendenhall	Golden Gate National Recreation Area, Sausalito	Historical	Refer: RWQCB
Angel Island State Park	Angel Island, San Francisco Bay	Historical	Refer: RCRA
Naval Net Depot	Tiburon	Military Evaluation	No Further Action
San Francisco Nike Battery 91, Angel Island	Angel Island, San Francisco Bay	Military Evaluation	Inactive – Action Required
<b>REGIONAL WATER QUALITY CONTROL BOARD</b>			
Corte Madera Cleaners	143 Corte Madera Town Center, Corte Madera	Cleanup Program Site	Open – Long Term Management
<b>Former Bianco Cadillac/Saab-Subaru</b>	201 Casa Buena Drive, Corte Madera	LUST Cleanup Site	Open – Assessment & Interim Remedial Action
77 & 83 Broadway	77 Broadway, Fairfax	Cleanup Program Site	Open – Assessment & Interim Remedial Action
1589 Marshall Beach Road	1589 Marshall Beach Road, Fairfax	Land Disposal Site	Open
Halling Property	12788 Sir Frances Drake Boulevard, Fairfax	Cleanup Program Site	Open – Inactive
<b>Maintenance Facility – Samuel Taylor Park</b>	Unknown Samuel Taylor Park, Lagunitas	LUST Cleanup Site	Open – Site Assessment
<b>Former Econogas Station</b>	2070 Redwood Highway, Larkspur	LUST Cleanup Site	Open – Site Assessment
Larkspur Ferry Terminal	East Sir Francis Drake Boulevard, Larkspur	Cleanup Program Site	Open – Inactive
<b>Marin Car Wash</b>	2066 Redwood Highway, Larkspur	LUST Cleanup Site	Open - Eligible For Closure
Grossi Dairy	16500 State Route 1, Marshall	Land Disposal Site	Open
Marshall Boat Works	19180-19145 State Route One, Marshall	Cleanup Program Site	Open – Site Assessment

<b>Site/Facility Name<sup>1</sup></b>	<b>Address/Description</b>	<b>Program Type<sup>2</sup></b>	<b>Status<sup>3</sup></b>
Zimmerman Dairy	22788 Clark Road, Marshall	Land Disposal Site	Open
<b>Chevron Strawberry Food Mart</b>	580 Redwood Highway, Mill Valley	LUST Cleanup Site	Open – Site Assessment
<b>Jiffy Lube #655</b>	374 Miller Avenue, Mill Valley	LUST Cleanup Site	Open – Site Assessment
<b>Marin Car Wash</b>	584 Redwood Highway, Mill Valley	LUST Cleanup Site	Open – Site Assessment
Martin's Triangle	234 Shoreline Highway, Mill Valley	Cleanup Program Site	Open – Inactive
Mill Valley Middle School	Unknown Camino Alto & Sycamore, Mill Valley	Cleanup Program Site	Open – Inactive
York Cleaners	31 Miller Avenue, Mill Valley	Cleanup Program Site	Open – Verification Monitoring
Gonzales Landfill	5749 Lucas Valley, Nicasio	Land Disposal Site	Open
Lucas Valley Road Spill	3838 Lucas Valley Road, Nicasio	Cleanup Program Site	Open – Remediation
<b>Chevron</b>	5810 Nave Drive, Novato	LUST Cleanup Site	Open – Site Assessment
Fairfax French Cleaners	173 San Marin Drive, Novato	Cleanup Program Site	Open – Verification Monitoring
<b>Former Mobil RAS #04-HTR</b>	1400 Novato Boulevard South, Novato	LUST Cleanup Site	Open – Eligible For Closure
Hamilton Air Base	Novato	Land Disposal Site	Open
<b>Indian Valley College</b>	1800 Ignacio Boulevard, Novato	LUST Cleanup Site	Open – Site Assessment
<b>Novato Bus Facility</b>	801 Golden Gate Place, Novato	LUST Cleanup Site	Open – Verification Monitoring
<b>Novato Unified School District Maintenance Facility</b>	819 Olive Street, Novato	LUST Cleanup Site	Open – Site Assessment
Redwood Landfill	Highway 101 North, Novato	Land Disposal Site	Open – Operating
Seven to Seven Cleaners	1432 South Novato Boulevard, Novato	Cleanup Program Site	Open – Remediation
<b>Shell</b>	2085 Novato Boulevard South, Novato	LUST Cleanup Site	Open – Site Assessment
<b>Unocal</b>	7455 Redwood Boulevard, Novato	LUST Cleanup Site	Open – Remediation
Chileno Valley Mercury Mine	Chileno Valley Road, west of Petaluma	Cleanup Program Site	Open – Site Assessment
West Marin Landfill	Highway 1, Point Reyes Station	Land Disposal Site	Open
<b>Former Chevron</b>	700/750 Sir Francis Drake Boulevard, San Anselmo	LUST Cleanup Site	Open – Site Assessment
San Quentin State Prison	I-580 at Main Street, San Quentin	Cleanup Program Site	Open – Verification Monitoring
7 Hoag Street	7 Hoag Street, San Rafael	Cleanup Program Site	Open – Eligible For Closure
Bayview Business Park- Horst Hanf Landfill	22 Pelican Way, San Rafael	Land Disposal Site	Open – Closed/With Monitoring
Former Fairchild Semiconductor	4300 Redwood Highway, San Rafael	Cleanup Program Site	Open – Verification Monitoring
Former Grand Auto Store #9	850 4th Street, San Rafael	Cleanup Program Site	Open – Inactive
Former Marin Cleaners	520 4th Street, San Rafael	Cleanup Program Site	Open – Verification Monitoring



Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
Former Prosperity Cleaners	187 Marinwood Avenue, San Rafael	Cleanup Program Site	Open – Remediation
Ghilotti, Barbara Fasken Trust	200 Morpew Street, San Rafael	Cleanup Program Site	Open – Inactive
Loch Lomond Marina	261 Loch Lomond Drive, San Rafael	Cleanup Program Site	Open – Verification Monitoring
Los Gallinas Sanitary District	300 Smith Ranch Road, San Rafael	Cleanup Program Site	Open – Inactive
Marin/Sonoma Mosquito (former)	201 Third Street, San Rafael	Cleanup Program Site	Open – Inactive
PG&E – Manufactured Gas Plant – San Rafael	Third Street and Brooks Avenue, San Rafael	Cleanup Program Site	Open – Remediation
San Quentin Solid Waste District	1615 Francisco Boulevard, San Rafael	Land Disposal Site	Open
<b>San Rafael City Schools Maintenance Facility</b>	38 Union Street, San Rafael	LUST Cleanup Site	Open – Verification Monitoring
<b>Shell</b>	834 Irwin Street, San Rafael	LUST Cleanup Site	Open – Verification Monitoring
Warnecke Property	62-68 Belvedere Street, San Rafael	Cleanup Program Site	Informational Item / Review Complete
Former Anderson's Boat Yard	400 Harbor Drive, Sausalito	Cleanup Program Site	Open – Verification Monitoring
Marinship	2330 Marinship Way, Sausalito	Cleanup Program Site	Open – Inactive
Newhall Residence	2900 Paradise Drive, Tiburon	Cleanup Program Site	Open – Inactive
<b>Ledger Ranch 2000</b>	<b>5700 Middle Road, Petaluma (Tomaes)</b>	<b>LUST Cleanup Site</b>	<b>Open – Active</b>
Sartori Dairy	3301 Tomales Petaluma Highway, Tomales	Land Disposal Site	Open
Soulajule Reservoir	Soulajule Reservoir, West Marin	Cleanup Program Site	Open – Site Assessment

SOURCE: Department of Toxic Substances Control (DTSC) EnviroStor website, <https://www.envirostor.dtsc.ca.gov/public/search?basic=True>, accessed 6/8/22; Regional Water Quality Control Board (RWQCB) GeoTracker website, <https://geotracker.waterboards.ca.gov/search?cmd=search&hidept=True&status=&reporttitle=Marin+County&county=Marin&excludenc=True>, accessed 6/10/22, 7/9/22.

#### **Notes**

<sup>1</sup> Site/Facility Name:

**Bold site/facility name** indicates site on State's Cortese list.

<sup>2</sup> Program Type:

**Cal-Mortgage:** Under a Memorandum of Understanding with the Cal-Mortgage Loan Insurance Division (Cal-Mortgage) of the Office of Statewide Health Planning and Development, DTSC reviews environmental documents for sites applying for their guaranteed loan insurance program for the construction, improvement and expansion of health care facilities. The loan applicants are either public entities or non-profit groups. The environmental review is done as part of the real estate due diligence process and the properties are not expected to have had hazardous substances releases.

**Cleanup Program Sites:** Includes all "non-federally owned" sites that are regulated under the State Water Resources Control Board's Site Cleanup Program and/or similar programs conducted by each of the nine Regional Water Quality Control Boards. Cleanup Program Sites are also commonly referred to as "Site Cleanup Program sites". Cleanup Program Sites are varied and include but are not limited to pesticide and fertilizer facilities, rail yards, ports, equipment supply facilities, metals facilities, industrial manufacturing and maintenance sites, dry cleaners, bulk transfer facilities, refineries, mine sites, landfills, RCRA/CERCLA cleanups, and some brownfields. Unauthorized releases detected at Cleanup Program Sites are highly variable and include but are not

Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
<p>limited to hydrocarbon solvents, pesticides, perchlorate, nitrate, heavy metals, and petroleum constituents, to name a few.</p> <p><b>Corrective Action:</b> Investigation and cleanup activities at hazardous waste facilities (either Resource Conservation and Recovery Act (RCRA) or State-only) that either were eligible for a permit or received a permit are called "corrective actions." These facilities treated, stored, disposed and/or transferred hazardous waste.</p> <p><b>Evaluation:</b> Identifies suspected, but unconfirmed, contaminated sites that need or have gone through a limited investigation and assessment process. If a site is found to have confirmed contamination, it will change from Evaluation to either a State Response or Voluntary Cleanup site type. Sites found to have no contamination at the completion of the limited investigation and/or assessment process result in a No Action Required (for Phase I assessments) or No Further Action (for Preliminary Endangerment Assessments [PEAs] or Phase II assessments) determination.</p> <p><b>Haz Waste – RCRA:</b> A facility handling federal Resource Conservation and Recovery Act (RCRA) hazardous waste and permitted under the State's five-tiered program.</p> <p><b>Haz Waste – Standardized:</b> A facility handling non-RCRA hazardous waste, but waste regulated as a hazardous waste in California and permitted under the State's five-tiered program.</p> <p><b>Historical:</b> Identifies sites from an older database where no site type was identified. Most of these sites have a status of Referred or No Further Action. DTSC is working to clean-up this data by identifying an appropriate site type for each "Historic" site.</p> <p><b>Land Disposal Sites:</b> Includes sites with solid and/or liquid wastes discharged to land such as landfills, mines, surface impoundments, waste piles, and land treatment facilities. These may be regulated pursuant to the California Code of Regulations (Chapter 15 of Title 23, or Title 27), or regulated pursuant to the California Water Code. Land disposal sites regulated pursuant to the California Water Code include composting facilities. Wastes contained at land disposal sites are characterized as Class I (hazardous), Class II (designated), Class III (non-hazardous), or Unclassified (inert) pursuant to the California Code of Regulations, Title 22.</p> <p><b>Leaking Underground Storage Tank (LUST) Cleanup Sites (LUST Cleanup Site):</b> Includes all Underground Storage Tank (UST) sites that have had an unauthorized release (i.e. leak or spill) of a hazardous substance, usually fuel hydrocarbons, and are being (or have been) cleaned up. In GeoTracker, Leaking Underground Storage Tank (LUST) sites consist almost entirely of fuel-contaminated LUST sites (also known as "Leaking Underground Fuel Tank", or "LUFT" sites) which are regulated pursuant to Title 23 of the California Code of Regulations, Chapter 16, Article 11.</p> <p><b>LUST (Leaking Underground Storage Tank):</b> One or more underground storage tanks (USTs) that leak petroleum and other hazardous substances into soil and groundwater, thereby posing a risk to drinking water quality and human health.</p> <p><b>Military Evaluation:</b> Military evaluation sites are military facilities where no remedial action has occurred, based on the completed activities. These can include Open Bases, Closed Bases and formerly used defense sites (FUD sites).</p> <p><b>State Response:</b> Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.</p> <p><b>School Investigation:</b> School investigation sites are proposed for existing school sites that are being evaluated by DTSC for possible hazardous materials contamination where no remedial action has occurred based on completed activities.</p> <p><b>Tiered Permit:</b> California's five-tier permitting program. The tiers, in descending order of regulatory oversight, are:</p> <p><i>Full Permit Tier</i> – Facilities requiring an RCRA permit, plus selected non-RCRA activities pursuant to Title 22, California Code of Regulations.</p> <p><i>Standardized Permit Tier</i> – Facilities that manage waste not regulated under RCRA, but regulated as a hazardous waste by the State of California.</p> <p><i>Permit by Rule Tier</i> – A California-only (non-RCRA) onsite treatment permit for specific waste streams and treatment processes where wastes that are generated at the facility are treated onsite.</p> <p><i>Conditional Authorization Tier</i> – A California-only (non-RCRA) onsite treatment authorization for specifically defined waste streams.</p>			

Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
<p><i>Conditional Exemption Tier</i> – A California-only (non-RCRA) onsite treatment authorization for small-quantity treatment and other low-risk treatment.</p>			
<p><u>Voluntary Cleanup</u>: Identifies sites with either confirmed or unconfirmed releases, and the project proponents have requested that DTSC oversee evaluation, investigation, and/or cleanup activities and have agreed to provide coverage for DTSC's costs.</p>			
<p><sup>3</sup> <i>Status</i>:</p>			
<p><u>Active</u>: Identifies that an investigation and/or remediation is currently in progress and that DTSC is actively involved, either in a lead or support capacity.</p>			
<p><u>Active – Land Use Restrictions</u>: A land use restricted site is a property where limits or requirements on future use of the property have been placed due to varying levels of cleanup possible, practical, or necessary at the site.</p>			
<p><u>Certified</u>: Identifies sites that have certified cleanups in place or completed sites with previously confirmed release that are subsequently certified by DTSC as having been remediated satisfactorily under DTSC oversight.</p>			
<p><u>Certified/Operation &amp; Maintenance</u>: Identifies sites that have certified cleanups in place but require ongoing Operation and Maintenance (O&amp;M) activities. The Certified O&amp;M status designation means that all planned activities necessary to address the contamination problems have been implemented. However, some of these remedial activities (such as pumping and treating contaminated groundwater) must be continued for many years before complete cleanup will be achieved. Prior to the Certified O&amp;M designation, all institutional controls (e.g., land use restrictions) that are necessary to protect public health must be in place.</p>			
<p><u>Certified O&amp;M – Land Use Restrictions</u>: Identifies sites where a remedy is implemented and the selected remedy results in hazardous substances remaining at the site at concentrations above those acceptable for unrestricted use and a Land Use Restriction or Land Use Covenant has been recorded for the site.</p>			
<p><u>Closed</u>: Identifies a facility that has completed closure of all hazardous waste management units.</p>			
<p><u>Completed – Case Closed</u>: A closure letter or other formal closure decision document has been issued for the site.</p>			
<p><u>Inactive – Action Required</u>: Identifies non-active sites where, through a PEA (initial assessment) or other evaluation, DTSC has determined that a removal or remedial action or further extensive investigation is required.</p>			
<p><u>Inactive – Needs Evaluation</u>: Identifies non-active sites where DTSC has determined a Preliminary Endangerment Assessment (PEA) or other evaluation is required.</p>			
<p><u>No Further Action</u>: Identifies completed sites where DTSC determined after investigation, generally a PEA (initial assessment), that the property does not pose a problem to public health or the environment.</p>			
<p><u>Open</u>: Identified steps for case closure remain to be completed, and until then case is considered open.</p>			
<p><u>Open – Assessment &amp; Interim Remedial Action</u>: An "interim" remedial action is occurring at the site AND additional activities such as site characterization, investigation, risk evaluation, and/or site conceptual model development are occurring.</p>			
<p><u>Open – Closed/with Monitoring</u>: A land disposal site that has ceased accepting waste and was closed in accordance with applicable statutes, regulations, and local ordinances in effect at time of closure. Land disposal site in post closure maintenance period as waste could have an adverse effect on the quality of the waters of the state. Site has waste discharge requirements.</p>			
<p><u>Open – Eligible for Closure</u>: Corrective action at the site has been determined to be completed and any remaining petroleum constituents from the release are considered to be a low threat to human health, safety, and the environment.</p>			
<p><u>Open – Inactive</u>: No regulatory oversight activities are being conducted by the Lead Agency.</p>			
<p><u>Open – Long Term Management</u>: Remediation phases are complete, all current risks to receptors are mitigated, and risk management measures are in place. A monitoring/sampling program is occurring to confirm ongoing performance of the risk management measures (e.g. visual inspection of caps to prevent dermal exposure, or pressure monitoring of sub-slab depressurization systems). The case should be periodically re-evaluated (i.e. Five Year Reviews) to verify that the risk management remains effective and to evaluate the case for closure when risk management is no longer warranted.</p>			

Site/Facility Name <sup>1</sup>	Address/Description	Program Type <sup>2</sup>	Status <sup>3</sup>
<p><u>Open – Operating</u>: A land disposal site that is accepting waste. These sites have been issued waste discharge requirements by the appropriate Regional Water Board.</p> <p><u>Open – Remediation</u>: An approved remedy or remedies that has/have been selected for the impacted area at the site and is being implemented by the responsible party under an approved cleanup plan for the site. This includes any ongoing remedy that is either passive or active, or uses a combination of technologies.</p> <p><u>Open – Site Assessment</u>: Site characterization, investigation, risk evaluation, and/or site conceptual model development are occurring at the site. Examples of site assessment activities include, but are not limited to, the following: (1) identification of the contaminants and the investigation of their potential impacts; (2) determination of the threats/impacts to water quality; (3) evaluation of the risk to humans and ecology; (4) delineation of the nature and extent of contamination; (5) delineation of the contaminant plume(s); and (6) development of the Site Conceptual Model.</p> <p><u>Open – Verification Monitoring</u>: Remediation phases that are essentially complete, and a monitoring/sampling program is occurring to confirm successful completion of cleanup at the site--e.g., no “active” remediation is considered necessary or no additional “active” remediation is anticipated as needed; or an active remediation system has been shut-off and the potential for a rebound in contaminant concentrations is under evaluation.</p> <p><u>Refer: Other Agency</u>: Identifies sites that, based on limited information available to DTSC, appear to be more appropriately addressed by another state or local environmental regulatory agency.</p> <p><u>Refer: RCRA</u>: Identifies sites that, based on limited information available to DTSC, appear to be more appropriately addressed by DTSC’s Hazardous Waste Management Program and are identified as Resource Conservation and Recovery Act (RCRA).</p> <p><u>Refer: RWQCB</u>: Identifies sites that, based on limited information available to DTSC, appear to be more appropriately addressed by the California Regional Water Quality Control Boards (RWQCBs) (see GeoTracker list).</p>			

Link to MarinMap: <https://www.marinmap.org/Html5Viewer/Index.html?viewer=smmdataviewer>  
 Layer Name = "Hazardous Sites Cortese"

OBJECTID	Business name	Street Number	Street Name	City	State	Zip	Unincorp?	Case Type
34	X WEST MARIN LANDFILL		HIGHWAY 1	POINT REYES STATIO	CA	94956	YES	Land Disposal Site
36	GROSSI DRAINAGE	16500	STATE ROUTE 1	MARSHALL	CA	94940	YES	Cleanup Program Site
38	GAMBONINI MERCURY MINESITE		MARSHALL PETALUMA RD	WEST MARIN CO	CA	94940	YES	Land Disposal Site
39	NOVATO STORAGE PARK RANCHO DEL PANTANO		AIRPORT RD & BINFORD RD	NOVATO	CA	94945	YES	Cleanup Program Site
41	SAN QUENTIN STATE PRISON		I-580 @ MAIN ST	SAN QUENTIN	CA	94964	YES	Cleanup Program Site
42	SAMUEL TAYLOR PARK		SAMUEL TAYLOR PARK	LAGUNITAS	CA	94938	YES	LUST Cleanup Site
45	PROSPERITY CLEANERS	187	MARINWOOD AVE.	SAN RAFAEL	CA	94903	YES	Cleanup Program Site
46	PRIVATE RESIDENCE		PRIVATE RESIDENCE - WHARF RD	BOLINAS	CA	94924	YES	LUST Cleanup Site
47	BOLINAS MESA PROJECT	270	ELM ROAD	BOLINAS	CA	94924	YES	Wastewater Treatment
48	SARTORI DAIRY	3301	TOMALES PETALUMA HWY	TOMALES	CA	94971	YES	Land Disposal Site
49	REDWOOD LANDFILL		HIGHWAY 101 NORTH	NOVATO	CA	94947	YES	Land Disposal Site
50	GONZALES LANDFILL	5749	LUCAS VALLEY	NICASIO	CA	94946	YES	Land Disposal Site
51	GROSSI DAIRY	16500	STATE ROUTE 1	MARSHALL	CA	94940	YES	Land Disposal Site
52	ZIMMERMAN DAIRY	22788	CLARK RD.	MARSHALL	CA	94940	YES	Land Disposal Site
53	X 1589 MARSHALL RD.	1589	MARSHALL RD.	TOMALES	CA	94971	YES	Land Disposal Site
54	CIRCLE S RANCH	1740	TOMALES ROAD	PETALUMA	CA	94952	YES	Cleanup Program Site
55	MARSHALL BOAT WORKS	19180	STATE ROUTE ONE	MARSHALL	CA	94940	YES	Cleanup Program Site
56	HALLING PROPERTY	12788	SIR FRANCES DRAKE BLVD	INVERNESS	CA	94937	YES	Cleanup Program Site
57	BLACK JOHN SLOUGH RANCHO DEL PANTANO	8190	BINFORD RD	NOVATO	CA	94945	YES	Cleanup Program Site
58	MARTIN'S TRIANGLE	234	SHORELINE HWY	MILL VALLEY	CA	94941	YES	Cleanup Program Site
60	NEWHALL RESIDENCE	2900	PARADISE DR	TIBURON	CA	94920	YES	Cleanup Program Site
61	NPS- NORTH DISTRICT OPERATIONS CENTER	17400	SIR FRANCIS DRAKE BLVD.	INVERNESS	CA	94937	YES	LUST Cleanup Site
62	COLLEGE OF MARIN KENTFIELD CAMPUS	835	COLLEGE AVENUE	KENTFIELD	CA	94904	YES	LUST Cleanup Site
63	MARIN COUNTY AIRPORT GNOSS FIELD	451	AIRPORT RD	NOVATO	CA	94948	YES	LUST Cleanup Site
64	Strawberry Chevron Food Mart	580	Redwood Highway	Mill Valley	CA	94941	YES	LUST Cleanup Site
65	DRAKES HIGHWAY GARAGE	12786	SIR FRANCIS DRAKE BLVD	INVERNESS	CA	94937	YES	LUST Cleanup Site
66	MARIN CAR WASH	584	REDWOOD HWY	MILL VALLEY	CA	94941	YES	LUST Cleanup Site

Status	Status Date	Lead Agency	seWo	Local Agency	RB Case Number	Loc Case Number	File Location
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		2 215099001		
Open - Inactive	1995-09-01	SAN FRANCISCO BAY RWQCB (REGION 2)	UNA		SL20282900		
Open - Inactive	2009-10-30	SAN FRANCISCO BAY RWQCB (REGION 2)	LW		2 215068N01		
Open - Inactive	2009-04-17	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU		21S0007		
Open - Site Assessment	2002-01-14	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ		21S0020		Regional Board
Open - Site Assessment	1997-08-04	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0135	21-0135	
Open - Site Assessment	2008-02-15	SAN FRANCISCO BAY RWQCB (REGION 2)	REL		21S0053		Regional Board
Open - Verification Monitoring	2009-10-18	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0380		Regional Board
		MARIN COUNTY DOHS		MARIN COUNTY			
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		D-21-0005		
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	VP		2 215065001		
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		2 215034N01		
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		D-21-0002		
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		D-21-0012		
Open	1965-01-01	SAN FRANCISCO BAY RWQCB (REGION 2)	TS		D-21-0022		
Open - Inactive	2009-02-26	NORTH COAST RWQCB (REGION 1)	CHH	SONOMA COUNTY	1NSO756		Regional Board
Open - Inactive	2009-05-11	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU		21S0015		
Open - Inactive	2009-05-11	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU		21S0022		
Open - Inactive	2009-04-17	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU		21S0026		
Open - Inactive	2009-04-17	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU	MARIN COUNTY	21S0013		Regional Board
Open - Inactive	2009-05-11	SAN FRANCISCO BAY RWQCB (REGION 2)	UUU		21S0010		
Open - Site Assessment	2007-03-08	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0386		
Open - Site Assessment	2001-11-05	SAN FRANCISCO BAY RWQCB (REGION 2)	REL	MARIN COUNTY	21-0365	UNKNOWN	Regional Board
Open - Site Assessment	1995-07-06	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0298	21-0298	
Open - Site Assessment	2010-08-27	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0402		Regional Board
Open - Verification Monitoring	2009-11-25	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0360		
Open - Site Assessment	1994-12-08	SAN FRANCISCO BAY RWQCB (REGION 2)	JMJ	MARIN COUNTY	21-0069	21-0069	

Land Use Restrictions	Potential Contaminants Of Conce	Potential Media Affected	Site History
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		Other Groundwater (uses other than drinking water), Soil, Soil	Area of concern is the maintenance and garage yard of SQSP.
		Other Groundwater (uses other than drinking water)	2 underground storage tanks removed, gasoline contaminated
		Indoor Air, Other Groundwater (uses other than drinking water)	lengthy history on GeoTracker website with numerous docume
		Other Groundwater (uses other than drinking water)	
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		Soil	This case was filed based on a neighbor complaint regarding t
		NONE LISTED	
		NONE LISTED	
		NONE LISTED	
		Soil	
		NONE LISTED	
		Other Groundwater (uses other than drinking water)	1 underground storage tank was removed and the site is being
		Other Groundwater (uses other than drinking water)	Gasoline contaminated soil may have come into contact with g
		Other Groundwater (uses other than drinking water)	Groundwater and soil contaminated from jet fuel. Check with S
		NONE LISTED	underground storage containers were removed and potential g
		Other Groundwater (uses other than drinking water)	
		Other Groundwater (uses other than drinking water)	groundwater, soil and air contamination. Contact SWRCB and

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## **Appendix G: Supplemental Hydrology Information**

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**Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report)**

**Category 4A:**

Water segments where at least one of the listings is being addressed by a U.S. Environmental Protection Agency (EPA) approved TMDL.

Water Body	Water Body Type	Integrated Report Category	Water Body Counties	Pollutant
Arroyo Corte Madera Del Presidio	River & Stream	4a	Marin	Diazinon
Chicken Ranch Beach	Coastal & Bay Shoreline	4a	Marin	Indicator Bacteria
China Camp Beach	Coastal & Bay Shoreline	4a	Marin	Indicator Bacteria
Corte Madera Creek	River & Stream	4a	Marin	Diazinon
Coyote Creek (Marin County)	River & Stream	4a	Marin	Diazinon
Gallinas Creek	River & Stream	4a	Marin	Diazinon
McNears Beach	Coastal & Bay Shoreline	4a	Marin	Indicator Bacteria
Miller Creek	River & Stream	4a	Marin	Diazinon
Millerton Point	Coastal & Bay Shoreline	4a	Marin	Indicator Bacteria
Novato Creek	River & Stream	4a	Marin	Diazinon
Olema Creek subwatershed (Marin County, tributary to Lagunitas Creek)	River & Stream	4a	Marin	Pathogens
San Rafael Creek	River & Stream	4a	Marin	Diazinon
San Antonio Creek (Marin/Sonoma Co)	River & Stream	4a	Marin, Sonoma	Diazinon

**Category 5:**

Water segments that require the development of a TMDL.

Water Body	Water Body Type	Integrated Report Category	Water Body Counties	Pollutant
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Chlordane
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	DDT (Dichlorodiphenyltrichloroethane)
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Dieldrin
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Dioxin compounds (including 2,3,7,8-TCDD)
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Furan Compounds

San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Invasive Species
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Mercury
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	PCBs (Polychlorinated biphenyls)
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	PCBs (Polychlorinated biphenyls) (dioxin-like)
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Selenium
San Francisco Bay, Central	Bay & Harbor	5	Alameda, Contra Costa, Marin, San Francisco	Trash
Bon Tempe Reservoir	Lake & Reservoir	5	Marin	Mercury
Golden Hinde Beach	Coastal & Bay Shoreline	5	Marin	Indicator Bacteria
Lagunitas Creek	River & Stream	5	Marin	Nutrients
Lagunitas Creek	River & Stream	5	Marin	Pathogens
Lagunitas Creek	River & Stream	5	Marin	Sedimentation/Siltation
Nicasio Reservoir	Lake & Reservoir	5	Marin	Mercury
Paradise Cove Beach (San Francisco Bay, Central)	Coastal & Bay Shoreline	5	Marin	Indicator Bacteria
Richardson Bay	Bay & Harbor	5	Marin	Chlordane
Richardson Bay	Bay & Harbor	5	Marin	DDT (Dichlorodiphenyltrichloroethane)
Richardson Bay	Bay & Harbor	5	Marin	Dieldrin
Richardson Bay	Bay & Harbor	5	Marin	Dioxin compounds (including 2,3,7,8-TCDD)
Richardson Bay	Bay & Harbor	5	Marin	Furan Compounds
Richardson Bay	Bay & Harbor	5	Marin	Indicator Bacteria
Richardson Bay	Bay & Harbor	5	Marin	Invasive Species
Richardson Bay	Bay & Harbor	5	Marin	Mercury
Richardson Bay	Bay & Harbor	5	Marin	PCBs (Polychlorinated biphenyls)
Richardson Bay	Bay & Harbor	5	Marin	PCBs (Polychlorinated biphenyls) (dioxin-like)
Soulajule Reservoir	Lake & Reservoir	5	Marin	Mercury
Soulajule Reservoir	Lake & Reservoir	5	Marin	PCBs (Polychlorinated biphenyls)
Tomales Bay	Bay & Harbor	5	Marin	Mercury
Tomales Bay	Bay & Harbor	5	Marin	Nutrients
Tomales Bay	Bay & Harbor	5	Marin	Pathogens
Tomales Bay	Bay & Harbor	5	Marin	Sedimentation/Siltation
Walker Creek	River & Stream	5	Marin	Mercury
Walker Creek	River & Stream	5	Marin	Nutrients
Walker Creek	River & Stream	5	Marin	Pathogens
Walker Creek	River & Stream	5	Marin	Sedimentation/Siltation
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Chlordane
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	DDT (Dichlorodiphenyltrichloroethane)

San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Dieldrin
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Dioxin compounds (including 2,3,7,8-TCDD)
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Furan Compounds
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Invasive Species
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Mercury
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	PCBs (Polychlorinated biphenyls)
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	PCBs (Polychlorinated biphenyls) (dioxin-like)
San Pablo Bay	Bay & Harbor	5	Marin, Solano, Sonoma	Selenium
Petaluma River	River & Stream	5	Marin, Sonoma	Diazinon
Petaluma River	River & Stream	5	Marin, Sonoma	Nutrients
Petaluma River	River & Stream	5	Marin, Sonoma	Pathogens
Petaluma River	River & Stream	5	Marin, Sonoma	Sedimentation/Siltation
Petaluma River	River & Stream	5	Marin, Sonoma	Trash
Petaluma River (tidal portion)	River & Stream	5	Marin, Sonoma	Diazinon
Petaluma River (tidal portion)	River & Stream	5	Marin, Sonoma	Nickel
Petaluma River (tidal portion)	River & Stream	5	Marin, Sonoma	Nutrients
Petaluma River (tidal portion)	River & Stream	5	Marin, Sonoma	Pathogens

Source: State Water Resources Control Board, Impaired Water Bodies, Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report), [https://www.waterboards.ca.gov/water\\_issues/programs/tmdl/integrated2014\\_2016.shtml](https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml), accessed 9/10/20.

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## **Appendix H: Supplemental Noise Information**

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# Marin County Housing and Safety Element Update Marin County, CA

**Appendix: Noise Data**  
**Prepared by: MIG, Inc.**  
**August 2022**

## **Appendix Contents**

[Sheet 1: LT ANM](#)

Summary of Long-Term Ambient Noise Monitoring

[Sheet 2: ST ANM](#)

Summary of Short-Term Ambient Noise Monitoring

## Sheet 1: Summary of Long-Term Ambient Noise Monitoring Data

Table 1: Summary of Long-Term Noise Measurements LT-1

Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90	DNL	CNEL
Monday, May 16, 2022	1:00 PM	1 Hour	58.7	45.0	75.5	66.3	62.0	60.6	59.6	56.6	51.4	58.7	58.7
Monday, May 16, 2022	2:00 PM	1 Hour	58.9	44.4	73.2	65.7	62.2	61.0	60.0	57.2	52.0	58.9	58.9
Monday, May 16, 2022	3:00 PM	1 Hour	59.7	44.1	74.1	66.6	63.2	61.9	60.9	58.2	52.1	59.7	59.7
Monday, May 16, 2022	4:00 PM	1 Hour	59.3	41.5	79.3	66.6	62.6	61.4	60.2	57.3	51.4	59.3	59.3
Monday, May 16, 2022	5:00 PM	1 Hour	59.5	41.6	84.8	67.9	62.3	61.4	60.4	57.7	51.6	59.5	59.5
Monday, May 16, 2022	6:00 PM	1 Hour	57.6	39.6	72.7	64.4	61.7	60.2	58.8	55.3	47.7	57.6	57.6
Monday, May 16, 2022	7:00 PM	1 Hour	55.8	38.9	74.5	63.3	60.3	58.5	57.0	52.2	45.5	55.8	60.8
Monday, May 16, 2022	8:00 PM	1 Hour	54.9	36.0	79.7	64.8	59.3	56.7	54.3	49.1	42.5	54.9	59.9
Monday, May 16, 2022	9:00 PM	1 Hour	51.6	35.3	72.1	60.9	56.9	54.4	51.1	43.8	39.4	51.6	56.6
Monday, May 16, 2022	10:00 PM	1 Hour	49.4	34.8	67.3	59.1	54.2	51.1	48.3	42.0	37.7	59.4	59.4
Monday, May 16, 2022	11:00 PM	1 Hour	45.9	35.0	65.4	55.6	51.0	47.8	44.0	38.5	36.8	55.9	55.9
Tuesday, May 17, 2022	12:00 AM	1 Hour	43.6	33.8	66.3	54.2	48.2	42.6	39.0	36.5	35.4	53.6	53.6
Tuesday, May 17, 2022	1:00 AM	1 Hour	43.3	33.0	63.5	53.6	48.2	44.5	40.4	34.9	33.8	53.3	53.3
Tuesday, May 17, 2022	2:00 AM	1 Hour	39.3	32.9	62.3	49.6	42.7	40.2	37.7	34.2	33.7	49.3	49.3
Tuesday, May 17, 2022	3:00 AM	1 Hour	39.5	32.9	62.0	48.7	44.1	40.2	37.6	34.2	33.7	49.5	49.5
Tuesday, May 17, 2022	4:00 AM	1 Hour	41.3	33.2	64.9	51.3	46.3	41.0	36.3	34.5	34.1	51.3	51.3
Tuesday, May 17, 2022	5:00 AM	1 Hour	50.4	34.4	69.1	60.1	54.9	51.7	49.1	44.9	40.2	60.4	60.4
Tuesday, May 17, 2022	6:00 AM	1 Hour	56.7	36.4	78.4	66.1	61.2	58.9	56.8	51.2	42.9	66.7	66.7
Tuesday, May 17, 2022	7:00 AM	1 Hour	58.7	38.8	73.1	65.3	62.5	61.2	59.9	56.8	50.8	58.7	58.7
Tuesday, May 17, 2022	8:00 AM	1 Hour	60.6	39.9	74.6	66.4	63.2	62.4	61.5	59.6	55.5	60.6	60.6
Tuesday, May 17, 2022	9:00 AM	1 Hour	57.9	38.0	72.4	65.4	62.1	60.6	59.0	55.3	47.6	57.9	57.9
Tuesday, May 17, 2022	10:00 AM	1 Hour	57.9	37.2	75.3	65.6	61.9	60.6	59.1	55.3	46.7	57.9	57.9
Tuesday, May 17, 2022	11:00 AM	1 Hour	58.5	37.2	78.4	67.2	62.4	60.8	59.1	55.3	46.5	58.5	58.5
Tuesday, May 17, 2022	12:00 PM	1 Hour	57.7	38.5	71.9	64.8	61.5	60.2	58.9	55.7	48.4	57.7	57.7
<i>Daytime (7 AM to 7 PM)</i>			<i>58.8</i>	<i>37.2</i>	<i>84.8</i>	<i>66.1</i>	<i>62.3</i>	<i>61.1</i>	<i>59.9</i>	<i>56.9</i>	<i>51.0</i>	<i>--</i>	<i>58.8</i>
<i>Daytime (7 AM to 10 PM)</i>			<i>58.3</i>	<i>35.3</i>	<i>84.8</i>	<i>65.7</i>	<i>61.8</i>	<i>60.5</i>	<i>59.2</i>	<i>56.1</i>	<i>50.2</i>	<i>58.3</i>	<i>--</i>
<i>Evening (7 PM to 10 PM)</i>			<i>54.5</i>	<i>35.3</i>	<i>79.7</i>	<i>63.3</i>	<i>59.0</i>	<i>56.9</i>	<i>54.8</i>	<i>49.6</i>	<i>43.1</i>	<i>--</i>	<i>59.5</i>
<i>Nighttime (10 PM to 7 AM)</i>			<i>49.3</i>	<i>32.9</i>	<i>78.4</i>	<i>58.9</i>	<i>54.0</i>	<i>51.3</i>	<i>48.8</i>	<i>43.5</i>	<i>37.8</i>	<i>59.3</i>	<i>59.3</i>
<i>DNL</i>			<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>58.7</i>	<i>--</i>
<i>CNEL</i>			<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>59.1</i>

Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90	DNL	CNEL
Tuesday, May 17, 2022	1:00 PM	1 Hour	57.4	40.2	70.0	64.5	61.3	59.9	58.7	55.2	47.6	57.4	57.4
Tuesday, May 17, 2022	2:00 PM	1 Hour	58.7	40.5	74.6	65.4	62.3	61.2	59.9	56.9	50.2	58.7	58.7
Tuesday, May 17, 2022	3:00 PM	1 Hour	59.3	43.6	73.7	65.7	62.8	61.4	60.4	57.9	52.0	59.3	59.3
Tuesday, May 17, 2022	4:00 PM	1 Hour	59.5	40.9	79.7	67.9	62.6	61.3	60.1	57.1	50.1	59.5	59.5
Tuesday, May 17, 2022	5:00 PM	1 Hour	58.7	41.0	76.0	65.4	62.1	61.0	60.0	57.2	50.7	58.7	58.7
Tuesday, May 17, 2022	6:00 PM	1 Hour	57.4	39.8	72.6	64.7	61.5	60.0	58.7	54.8	47.5	57.4	57.4
Tuesday, May 17, 2022	7:00 PM	1 Hour	56.1	41.6	68.1	63.1	60.3	58.9	57.5	53.1	47.0	56.1	61.1
Tuesday, May 17, 2022	8:00 PM	1 Hour	54.3	38.8	67.7	62.4	58.9	57.0	55.1	49.8	44.3	54.3	59.3
Tuesday, May 17, 2022	9:00 PM	1 Hour	52.3	35.5	75.5	61.9	56.9	54.6	51.9	45.9	39.7	52.3	57.3
Tuesday, May 17, 2022	10:00 PM	1 Hour	50.6	34.7	69.2	60.7	55.7	52.0	48.3	42.2	38.5	60.6	60.6
Tuesday, May 17, 2022	11:00 PM	1 Hour	43.9	33.7	63.1	53.4	49.2	45.0	41.4	37.5	36.2	53.9	53.9
Wednesday, May 18, 2022	12:00 AM	1 Hour	40.4	33.3	64.1	50.0	45.2	40.1	36.3	34.7	34.1	50.4	50.4
Wednesday, May 18, 2022	1:00 AM	1 Hour	43.4	33.0	67.7	54.8	47.2	43.6	40.3	35.1	33.7	53.4	53.4
Wednesday, May 18, 2022	2:00 AM	1 Hour	34.7	32.8	53.6	38.5	36.0	35.4	34.7	34.1	33.7	44.7	44.7
Wednesday, May 18, 2022	3:00 AM	1 Hour	45.2	33.2	67.3	56.4	49.6	41.7	37.2	35.1	34.3	55.2	55.2
Wednesday, May 18, 2022	4:00 AM	1 Hour	42.9	33.5	66.9	53.4	47.0	43.0	39.5	36.5	34.7	52.9	52.9
Wednesday, May 18, 2022	5:00 AM	1 Hour	50.8	34.4	70.1	60.4	55.6	52.5	49.8	43.8	39.9	60.8	60.8
Wednesday, May 18, 2022	6:00 AM	1 Hour	56.6	38.2	74.8	65.8	61.4	59.0	56.9	50.6	43.5	66.6	66.6
Wednesday, May 18, 2022	7:00 AM	1 Hour	58.4	39.4	70.4	64.9	62.3	61.1	59.8	56.4	48.8	58.4	58.4
Wednesday, May 18, 2022	8:00 AM	1 Hour	60.1	39.8	73.3	66.0	63.3	62.4	61.3	58.8	53.3	60.1	60.1
Wednesday, May 18, 2022	9:00 AM	1 Hour	58.8	38.6	75.1	66.5	62.6	61.2	59.7	56.1	48.8	58.8	58.8
Wednesday, May 18, 2022	10:00 AM	1 Hour	58.1	39.6	72.0	65.3	61.9	60.7	59.4	55.8	47.9	58.1	58.1
Wednesday, May 18, 2022	11:00 AM	1 Hour	58.4	38.9	72.0	65.9	62.3	60.8	59.4	55.7	48.7	58.4	58.4
Wednesday, May 18, 2022	12:00 PM	1 Hour	57.6	39.2	72.6	64.4	61.4	60.2	58.9	55.5	48.6	57.6	57.6
<i>Daytime (7 AM to 7 PM)</i>			58.6	38.6	79.7	65.7	62.3	61.0	59.8	56.6	49.9	--	58.6
<i>Daytime (7 AM to 10 PM)</i>			58.0	35.5	79.7	65.2	61.8	60.4	59.2	55.9	49.2	58.0	--
<i>Evening (7 PM to 10 PM)</i>			54.5	35.5	75.5	62.5	58.9	57.2	55.4	50.5	44.6	--	59.5
<i>Nighttime (10 PM to 7 AM)</i>			49.5	32.8	74.8	59.1	54.3	51.4	48.9	43.0	38.0	59.5	59.5
DNL			--	--	--	--	--	--	--	--	--	58.6	--
CNEL			--	--	--	--	--	--	--	--	--	--	59.1

**Table 2: Summary of Long-Term Noise Measurements LT-2**

Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90	DNL	CNEL
Tuesday, May 17, 2022	11:00 AM	1 hour	44.4	30.3	68.8	53.2	48.7	45.7	43.8	41.2	36.1	44.4	44.4
Tuesday, May 17, 2022	12:00 PM	1 Hour	47.7	29.5	70.5	56.5	52.0	48.5	47.0	44.0	39.0	47.7	47.7
Tuesday, May 17, 2022	1:00 PM	1 Hour	45.1	31.9	69.2	54.3	49.5	46.2	43.5	40.5	37.7	45.1	45.1
Tuesday, May 17, 2022	2:00 PM	1 Hour	47.0	29.4	71.7	56.6	52.2	48.1	44.3	40.2	35.2	47.0	47.0
Tuesday, May 17, 2022	3:00 PM	1 Hour	46.4	31.7	70.2	55.6	50.6	47.4	44.6	42.0	39.8	46.4	46.4
Tuesday, May 17, 2022	4:00 PM	1 Hour	47.8	30.8	71.0	57.8	53.0	49.5	44.2	38.6	35.4	47.8	47.8
Tuesday, May 17, 2022	5:00 PM	1 Hour	46.1	30.7	71.0	56.3	51.3	46.8	41.6	35.8	33.7	46.1	46.1
Tuesday, May 17, 2022	6:00 PM	1 Hour	47.2	30.7	70.6	57.9	52.1	46.3	42.3	38.6	34.5	47.2	47.2
Tuesday, May 17, 2022	7:00 PM	1 Hour	43.8	28.8	67.4	53.7	48.9	45.4	41.4	36.6	32.8	48.8	48.8
Tuesday, May 17, 2022	8:00 PM	1 Hour	43.9	29.1	68.8	53.4	48.2	44.8	42.9	38.9	33.5	48.9	48.9
Tuesday, May 17, 2022	9:00 PM	1 Hour	31.9	29.5	42.0	34.2	32.7	32.3	32.1	31.7	31.2	36.9	36.9
Tuesday, May 17, 2022	10:00 PM	1 Hour	38.2	29.3	62.6	44.8	43.4	41.9	38.8	33.6	31.0	48.2	48.2
Tuesday, May 17, 2022	11:00 PM	1 Hour	32.0	28.7	43.9	34.9	33.1	32.7	32.4	31.7	31.0	42.0	42.0
Wednesday, May 18, 2022	12:00 AM	1 Hour	30.6	26.9	37.1	32.4	31.4	31.2	31.0	30.5	29.8	40.6	40.6
Wednesday, May 18, 2022	1:00 AM	1 Hour	28.9	25.8	37.8	31.8	30.2	29.7	29.3	28.5	27.6	38.9	38.9
Wednesday, May 18, 2022	2:00 AM	1 Hour	29.9	26.2	42.4	32.9	31.0	30.6	30.3	29.7	28.9	39.9	39.9
Wednesday, May 18, 2022	3:00 AM	1 Hour	31.5	27.5	36.5	33.4	32.5	32.2	31.9	31.3	30.5	41.5	41.5
Wednesday, May 18, 2022	4:00 AM	1 Hour	34.0	28.4	45.6	37.3	35.6	35.1	34.6	33.6	32.1	44.0	44.0
Wednesday, May 18, 2022	5:00 AM	1 Hour	43.7	30.5	61.8	49.7	46.9	46.0	44.9	42.4	38.2	53.7	53.7
Wednesday, May 18, 2022	6:00 AM	1 Hour	45.0	34.4	68.6	54.4	49.4	46.0	42.9	39.7	37.3	55.0	55.0
Wednesday, May 18, 2022	7:00 AM	1 Hour	44.3	32.8	70.0	53.6	48.5	45.1	42.5	39.6	37.6	44.3	44.3
Wednesday, May 18, 2022	8:00 AM	1 Hour	45.9	31.9	69.9	55.5	50.4	47.0	44.2	40.3	37.1	45.9	45.9
Wednesday, May 18, 2022	9:00 AM	1 Hour	45.4	30.9	69.0	55.7	49.8	46.1	43.4	38.9	35.9	45.4	45.4
Wednesday, May 18, 2022	10:00 AM	1 Hour	45.5	30.3	70.0	55.0	51.0	47.0	42.2	37.8	35.7	45.5	45.5
<i>Daytime (7 AM to 7 PM)</i>			46.2	29.4	71.7	55.9	51.0	47.1	43.9	40.3	36.8	--	46.2
<i>Daytime (7 AM to 10 PM)</i>			45.7	28.8	71.7	55.3	50.4	46.6	43.4	39.8	36.3	46.4	--
<i>Evening (7 PM to 10 PM)</i>			42.2	28.8	68.8	51.8	46.9	43.4	40.6	36.6	32.6	--	47.2
<i>Nighttime (10 PM to 7 AM)</i>			38.9	25.8	68.6	46.7	42.8	40.7	38.7	36.1	33.3	48.9	48.9
DNL			--	--	--	--	--	--	--	--	--	47.5	--
CNEL			--	--	--	--	--	--	--	--	--	--	47.5

## Sheet 2: Summary of Short-Term Ambient Noise Monitoring Data

Table 1: Summary of Short-Term Ambient Noise Measurements (ST-01, ST-02, ST-03, and ST-04)

Site	Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90
ST-01	Monday, May 16, 2022	8:20 AM	10 minutes	57.5	54.1	63.2	60.4	59.0	58.4	58.0	57.3	56.0
	Monday, May 16, 2022	8:30 AM	10 minutes	57.6	53.5	62.1	60.0	59.0	58.6	58.2	57.3	56.0
	Monday, May 16, 2022	8:40 AM	10 minutes	58.3	53.7	63.0	60.9	59.8	59.4	59.0	58.1	56.6
	Monday, May 16, 2022	8:50 AM	10 minutes	59.8	54.3	75.0	66.6	62.7	60.9	59.7	58.4	56.6
	Monday, May 16, 2022	9:00 AM	10 minutes	57.2	53.5	62.6	59.9	58.4	58.0	57.7	57.0	55.9
	Monday, May 16, 2022	9:10 AM	10 minutes	58.8	53.7	64.4	61.3	60.2	59.8	59.5	58.5	57.0
	Hourly Average		1 hour	58.3	53.5	75.0	62.3	60.1	59.3	58.7	57.8	56.4
ST-02	Monday, May 16, 2022	9:30 AM	10 minutes	65.2	53.9	80.9	71.1	67.3	66.8	66.0	64.4	62.4
	Monday, May 16, 2022	9:40 AM	10 minutes	65.0	59.5	68.8	66.9	66.3	66.0	65.7	65.0	63.0
	Monday, May 16, 2022	9:50 AM	10 minutes	64.8	59.2	68.4	67.4	66.2	65.9	65.5	64.7	62.7
	Monday, May 16, 2022	10:00 AM	10 minutes	65.1	60.0	74.0	68.9	67.4	66.5	65.8	64.4	62.4
	Monday, May 16, 2022	10:10 AM	10 minutes	64.4	59.7	70.9	68.1	66.0	65.5	65.0	64.0	62.3
	Monday, May 16, 2022	10:20 AM	10 minutes	64.7	60.3	68.4	67.0	66.1	65.7	65.4	64.7	63.0
			1 hour	64.9	53.9	80.9	68.5	66.6	66.1	65.6	64.5	62.6
ST-03	Monday, May 16, 2022	11:00 AM	10 minutes	69.6	55.4	78.3	75.5	73.1	72.0	71.0	68.4	62.6
	Monday, May 16, 2022	11:10 AM	10 minutes	70.6	50.3	84.5	78.6	73.6	72.5	71.3	68.9	62.5
	Monday, May 16, 2022	11:20 AM	10 minutes	69.3	49.1	80.6	76.3	72.5	71.6	70.7	67.9	59.7
	Monday, May 16, 2022	11:30 AM	10 minutes	69.0	45.5	78.0	75.0	72.5	71.3	70.5	67.9	60.3
	Monday, May 16, 2022	11:40 AM	10 minutes	68.0	43.1	78.8	74.2	71.9	71.0	69.7	65.8	59.8
	Monday, May 16, 2022	11:50 AM	10 minutes	69.6	49.4	80.2	76.5	73.0	71.8	70.9	68.3	59.4
			1 hour	69.4	43.1	84.5	76.3	72.8	71.7	70.7	68.0	60.9
ST-04	Monday, May 16, 2022	2:10 PM	10 minutes	50.5	38.2	68.2	61.7	53.4	50.1	48.1	45.0	42.2
	Monday, May 16, 2022	2:20 PM	10 minutes	49.1	40.3	65.8	59.9	51.5	48.1	46.4	44.8	42.8
	Monday, May 16, 2022	2:30 PM	10 minutes	53.8	39.6	73.5	64.8	58.6	53.7	48.9	45.5	42.9
	Monday, May 16, 2022	2:40 PM	10 minutes	47.1	38.2	64.8	57.3	49.7	46.3	45.3	42.8	40.9
	Monday, May 16, 2022	2:50 PM	10 minutes	57.1	39.9	75.0	65.4	61.1	59.0	57.1	54.5	50.0
	Monday, May 16, 2022	3:00 PM	10 minutes	54.9	38.1	74.0	64.8	58.0	56.6	55.4	50.9	47.4
			1 hour	53.4	38.1	75.0	63.2	57.1	54.5	52.6	49.4	45.7

**Table 2: Summary of Short-Term Ambient Noise Measurements (ST-05, ST-06, ST-07, and ST-08)**

Site	Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90
ST-05	Tuesday, May 17, 2022	8:30 AM	10 minutes	70.1	56.2	79.5	77.1	74.3	73.1	71.8	67.4	59.6
	Tuesday, May 17, 2022	8:40 AM	10 minutes	69.0	55.6	77.6	75.6	73.4	71.9	70.3	66.5	58.9
	Tuesday, May 17, 2022	8:50 AM	10 minutes	69.7	59.7	80.6	76.9	73.5	72.3	70.8	67.4	62.2
	Tuesday, May 17, 2022	9:00 AM	10 minutes	69.3	57.4	81.2	77.8	73.7	71.6	70.0	64.6	60.7
	Tuesday, May 17, 2022	9:10 AM	10 minutes	68.3	56.4	82.7	77.3	72.4	70.7	68.9	63.3	59.1
	Tuesday, May 17, 2022	9:20 AM	10 minutes	67.6	57.3	79.8	76.0	72.3	70.0	67.7	62.7	59.7
	Hourly Average		1 hour	69.1	55.6	82.7	76.8	73.3	71.7	70.1	65.7	60.2
ST-06	Tuesday, May 17, 2022	11:00 AM	10 minutes	52.5	46.0	65.2	58.8	55.6	54.5	53.2	50.6	48.9
	Tuesday, May 17, 2022	11:10 AM	10 minutes	51.9	46.6	58.8	56.4	54.3	53.5	52.6	51.1	49.5
	Tuesday, May 17, 2022	11:20 AM	10 minutes	53.0	45.9	61.0	57.8	55.9	55.0	53.8	52.1	49.6
	Tuesday, May 17, 2022	11:30 AM	10 minutes	54.9	45.6	72.1	63.5	58.6	57.8	56.9	51.3	49.1
	Tuesday, May 17, 2022	11:40 AM	10 minutes	51.7	46.8	60.5	56.0	53.9	53.3	52.8	51.1	49.2
	Tuesday, May 17, 2022	11:50 AM	10 minutes	50.4	44.8	58.5	54.5	52.7	51.7	50.9	49.6	48.1
			1 hour	52.6	44.8	72.1	59.0	55.6	54.7	53.8	51.0	49.1
ST-07	Tuesday, May 17, 2022	12:30 PM	10 minutes	63.1	38.8	72.5	70.7	67.7	66.2	64.2	59.6	49.0
	Tuesday, May 17, 2022	12:40 PM	10 minutes	63.2	38.0	75.0	69.9	66.8	65.8	64.8	61.4	53.8
	Tuesday, May 17, 2022	12:50 PM	10 minutes	63.9	41.2	75.9	71.1	68.0	66.6	65.5	61.6	51.4
	Tuesday, May 17, 2022	1:00 PM	10 minutes	63.7	38.7	79.4	72.5	67.5	66.2	64.4	60.4	49.6
	Tuesday, May 17, 2022	1:10 PM	10 minutes	63.7	41.5	73.8	70.9	67.8	66.6	65.3	61.2	50.9
	Tuesday, May 17, 2022	1:20 PM	10 minutes	63.4	38.7	72.3	70.3	67.6	66.6	65.0	60.9	51.1
			1 hour	63.5	38.0	79.4	71.0	67.6	66.3	64.9	60.9	51.3
ST-08	Tuesday, May 17, 2022	2:00 PM	10 minutes	53.3	39.8	69.6	61.1	58.1	56.7	53.4	49.2	47.3
	Tuesday, May 17, 2022	2:10 PM	10 minutes	48.1	39.6	60.6	52.7	49.7	49.1	48.7	47.7	44.9
	Tuesday, May 17, 2022	2:20 PM	10 minutes	47.3	37.2	53.6	50.6	48.9	48.5	48.0	47.2	45.1
	Tuesday, May 17, 2022	2:30 PM	10 minutes	48.0	36.8	63.4	55.0	51.3	49.9	48.8	46.3	42.5
	Tuesday, May 17, 2022	2:40 PM	10 minutes	41.3	37.3	54.3	47.0	43.3	42.4	41.8	40.5	39.0
	Tuesday, May 17, 2022	2:50 PM	10 minutes	40.9	36.5	50.0	45.3	42.9	42.3	41.7	40.3	38.4
			1 hour	48.5	36.5	69.6	55.2	52.2	51.0	48.9	46.3	44.0

**Table 3: Summary of Short-Term Ambient Noise Measurements (ST-09, ST-10, ST-11)**

Site	Date	Start Time	Duration	Leq	Lmin	Lmax	L01	L10	L16	L25	L50	L90
ST-09	Wednesday, May 18, 2022	8:50 AM	10 minutes	61.2	39.7	77.0	70.9	66.3	63.2	60.0	54.0	45.9
	Wednesday, May 18, 2022	9:00 AM	10 minutes	59.8	40.7	73.7	68.8	64.6	62.5	60.5	54.4	47.7
	Wednesday, May 18, 2022	9:10 AM	10 minutes	60.9	38.6	72.9	69.9	66.0	63.7	60.9	54.8	46.3
	Wednesday, May 18, 2022	9:20 AM	10 minutes	59.5	39.1	73.4	70.2	64.1	61.3	58.5	52.2	44.6
	Wednesday, May 18, 2022	9:30 AM	10 minutes	58.2	34.9	73.6	68.8	62.4	60.0	57.6	51.5	42.7
	Wednesday, May 18, 2022	9:40 AM	10 minutes	59.5	36.9	72.2	68.8	63.8	62.2	60.3	54.1	43.3
	Hourly Average		1 hour	60.0	34.9	77.0	69.6	64.7	62.3	59.8	53.7	45.4
ST-10	Wednesday, May 18, 2022	10:00 AM	10 minutes	68.4	39.6	82.4	77.2	72.8	71.2	69.7	64.3	54.0
	Wednesday, May 18, 2022	10:10 AM	10 minutes	68.0	42.1	81.1	76.7	72.1	70.5	69.0	63.9	55.6
	Wednesday, May 18, 2022	10:20 AM	10 minutes	68.9	41.7	85.0	78.7	72.9	71.2	69.7	64.3	54.8
	Wednesday, May 18, 2022	10:30 AM	10 minutes	68.5	39.1	82.2	77.6	72.6	71.1	69.7	64.3	54.0
	Wednesday, May 18, 2022	10:40 AM	10 minutes	68.1	42.2	81.3	77.0	72.5	70.7	68.8	64.2	54.8
	Wednesday, May 18, 2022	10:50 AM	10 minutes	68.3	40.8	82.7	77.6	72.9	70.9	69.1	63.6	50.4
			1 hour	68.4	39.1	85.0	77.5	72.6	70.9	69.3	64.1	54.2
ST-11	Wednesday, May 18, 2022	11:50 AM	10 minutes	59.1	50.8	63.8	62.3	61.1	60.6	60.2	58.9	56.1
	Wednesday, May 18, 2022	12:00 PM	10 minutes	57.9	51.5	62.7	60.3	59.4	59.1	58.8	57.8	55.7
	Wednesday, May 18, 2022	12:10 PM	10 minutes	58.3	51.4	62.8	61.4	60.1	59.7	59.3	58.0	55.7
	Wednesday, May 18, 2022	12:20 PM	10 minutes	58.3	52.2	64.5	61.6	60.4	59.8	59.3	57.8	55.5
	Wednesday, May 18, 2022	12:30 PM	10 minutes	58.1	52.7	67.0	62.1	60.0	59.3	58.9	57.7	55.4
	Wednesday, May 18, 2022	12:40 PM	10 minutes	63.6	53.7	88.9	76.7	62.4	61.0	60.4	59.3	57.2
			1 hour	59.8	50.8	88.9	69.6	60.7	60.0	59.5	58.3	56.0

**Summary**

**Filename** LxT\_Data.049  
**Serial Number** 5064  
**Model** SoundTrack LxT®  
**Firmware Version** 2.402  
**User**  
**Location**  
**Job Description**  
**Note**

Marin Co GP HE/SE EIR -

**Measurement Description** SJ1A 5/16-18/22  
**Start** 2022/05/16 12:50:00  
**Stop** 2022/05/18 13:24:19  
**Duration** 2 Days 00:34:19.0  
**Run Time** 2 Days 00:34:19.0  
**Pause** 0:00:00.0

**Pre Calibration** 2022/05/16 12:46:28  
**Post Calibration** 2022/05/18 13:25:43  
**Calibration Deviation** 0.02 dB

**Overall Settings**

**RMS Weight** A Weighting  
**Peak Weight** A Weighting  
**Detector** Slow  
**Preamp** PRMLxT1L  
**Microphone Correction** Off  
**Integration Method** Exponential  
**OBA Range** Normal  
**OBA Bandwidth** 1/1 and 1/3  
**OBA Freq. Weighting** A Weighting  
**OBA Max Spectrum** Bin Max  
**Overload** 122.5 dB

	<b>A</b>	<b>C</b>	<b>Z</b>
<b>Under Range Peak</b>	<b>79.1</b>	76.1	81.1 dB
<b>Under Range Limit</b>	<b>24.3</b>	25.3	31.4 dB
<b>Noise Floor</b>	15.1	16.2	22.3 dB

**Results**

**LASeq** 56.5 dB  
**LASE** 108.9 dB  
**EAS** 8.581 mPa<sup>2</sup>h  
**EAS8** 1.413 mPa<sup>2</sup>h  
**EAS40** 7.066 mPa<sup>2</sup>h  
**LAp<sub>peak</sub> (max)** 2022/05/17 9:51:28 105.7 dB  
**LAS<sub>max</sub>** 2022/05/16 17:50:57 84.8 dB  
**LAS<sub>min</sub>** 2022/05/18 2:36:19 32.8 dB  
**SEA** -99.9 dB



**LAS > 80.0 dB (Exceedence Counts / Duration)** 1 2.1 s

**LAS > 90.0 dB (Exceedence Counts / Duration)** 0 0.0 s

**LApeak > 125.0 dB (Exceedence Counts / Duration)** 0 0.0 s

**LApeak > 135.0 dB (Exceedence Counts / Duration)** 0 0.0 s

**LApeak > 140.0 dB (Exceedence Counts / Duration)** 0 0.0 s

Community Noise	Ldn	LDay LNight		Lden	LDay	LEvening	LNight
		07:00- 22:00-	07:00- 19:00		19:00- 22:00-	22:00- 07:00	
	58.6	58.1	49.4	59.1	58.7	54.5	49.4
LCSeq	63.8 dB						
LASeq	56.5 dB						
LCSeq - LASeq	7.4 dB						
LAleq	57.8 dB						
LAeq	56.5 dB						
LAleq - LAeq	1.4 dB						
# Overloads	0						
Overload Duration	0.0 s						
# OBA Overloads	0						
OBA Overload Duration	0.0 s						

**Dose Settings**

Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

**Results**

Dose	-99.9	0.00 %
Projected Dose	-99.9	0.00 %
TWA (Projected)	-99.9	-1.3 dB
TWA (t)	-99.9	11.7 dB
Lep (t)	64.3	64.3 dB

**Statistics**

LAS1.00	65.7 dB
LAS10.00	60.9 dB

<b>LAS16.67</b>	59.3 dB
<b>LAS25.00</b>	57.4 dB
<b>LAS50.00</b>	49.2 dB
<b>LAS90.00</b>	34.3 dB

**Calibration History**

<b>Preamp</b>	<b>Date</b>	<b>dB re. 1V/Pa</b>
<b>Direct</b>	2020/01/28 5:43:54	-28.6
<b>PRMLxT1L</b>	2022/05/18 13:25:41	-28.8
<b>PRMLxT1L</b>	2022/05/16 12:46:27	-28.8
<b>PRMLxT1L</b>	2022/05/03 9:01:14	-28.9
<b>PRMLxT1L</b>	2022/05/03 7:05:42	-28.9
<b>PRMLxT1L</b>	2022/04/06 0:22:11	-28.8
<b>PRMLxT1L</b>	2022/04/05 19:25:24	-28.8
<b>PRMLxT1L</b>	2022/04/02 23:03:52	-28.8
<b>PRMLxT1L</b>	2022/04/02 19:10:24	-28.8
<b>PRMLxT1L</b>	2022/04/02 17:43:08	-28.8
<b>PRMLxT1L</b>	2022/03/31 13:53:52	-28.9
<b>PRMLxT1L</b>	2022/03/31 13:37:13	-28.9

*Detailed calibration records available upon request.*

## Summary

Filename LxT\_Data.053  
Serial Number 5065  
Model SoundTrack LxT®  
Firmware Version 2.402

User

Location

Job Description

Note

Marin Co GP HE/SE EIR - SJ2

Measurement Description 5/17-18/22

Start 2022/05/17 10:40:00

Stop 2022/05/18 13:51:06

Duration 1 Day 03:11:06.0

Run Time 1 Day 03:11:06.0

Pause 0:00:00.0

Pre Calibration 2022/05/17 10:33:19

Post Calibration 2022/05/18 13:54:39

Calibration Deviation 0.06 dB

## Overall Settings

RMS Weight A Weighting

Peak Weight A Weighting

Detector Slow

Preamp Direct

Microphone Correction Off

Integration Method Exponential

OBA Range Normal

OBA Bandwidth 1/1 and 1/3

OBA Freq. Weighting A Weighting

OBA Max Spectrum Bin Max

Overload 122.2 dB

	A	C	Z
Under Range Peak	78.5	75.5	80.5 dB
Under Range Limit	15.5	14.2	17.9 dB
Noise Floor	6.4	5.0	8.8 dB

## Results

LASeq 44.4 dB

LASE 94.3 dB

EAS 296.317  $\mu\text{Pa}^2\text{h}$

EAS8 87.200  $\mu\text{Pa}^2\text{h}$

EAS40 436.001  $\mu\text{Pa}^2\text{h}$

LApeak (max) 2022/05/17 10:40:16 104.0 dB

LASmax 2022/05/18 13:49:14 71.8 dB

LASmin 2022/05/18 1:02:24 25.8 dB

SEA -99.9 dB

LAS > 80.0 dB (Exceedence  
Counts / Duration) 0 0.0 s

LAS > 90.0 dB (Exceedence  
Counts / Duration) 0 0.0 s

LApeak > 125.0 dB  
(Exceedence Counts /  
Duration) 0 0.0 s

LApeak > 135.0 dB  
(Exceedence Counts /  
Duration) 0 0.0 s

LApeak > 140.0 dB  
(Exceedence Counts /  
Duration) 0 0.0 s

Community Noise	Ldn	LDay LNight		Lden	LDay	LEvening	LNight
		07:00- 22:00-	07:00		19:00- 22:00-	07:00	
	47.2	45.6	38.9	47.5	46.1	42.2	38.9
LCSeq	54.6 dB						
LASeq	44.4 dB						
LCSeq - LASeq	10.2 dB						
LALeq	49.6 dB						
LAeq	44.4 dB						
LALeq - LAeq	5.2 dB						
# Overloads	0						
Overload Duration	0.0 s						
# OBA Overloads	0						
OBA Overload Duration	0.0 s						

**Dose Settings**

Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

**Results**

Dose	-99.9	-99.9 %
Projected Dose	-99.9	-99.9 %
TWA (Projected)	-99.9	-99.9 dB
TWA (t)	-99.9	-99.9 dB
Lep (t)	49.7	49.7 dB

**Statistics**

LAS1.00	53.8 dB
LAS10.00	43.4 dB
LAS16.67	41.2 dB

LAS25.00	39.3 dB
LAS50.00	35.6 dB
LAS90.00	30.2 dB

**Calibration History**

		<b>Date</b>	<b>dB re. 1V/Pa</b>
<b>Preamp</b>			
Direct		2020/01/28 6:05:01	-28.5
PRMLxT1L		2022/05/18 13:54:38	-28.6
PRMLxT1L		2022/05/17 10:33:16	-28.6
PRMLxT1L		2022/05/16 15:25:33	-28.7
PRMLxT1L		2022/05/16 14:05:34	-28.6
PRMLxT1L		2022/05/16 12:04:05	-28.7
PRMLxT1L		2022/05/16 8:10:38	-28.6
PRMLxT1L		2022/05/16 8:10:09	-28.6
PRMLxT1L		2022/05/03 9:04:41	-28.6
PRMLxT1L		2022/05/03 7:08:55	-28.6
PRMLxT1L		2022/04/02 17:21:13	-28.5
PRMLxT1L		2022/03/31 11:12:01	-28.5
Other		2022/03/29 14:00:31	-28.6
Other		2022/03/29 9:47:56	-28.5
Other		2018/11/13 8:29:15	-28.3
Other		2018/11/05 14:21:01	-28.3
Other		2018/06/27 10:46:33	-28.0
Other		2018/06/27 10:46:16	-28.0

*Detailed calibration records available upon request.*

**Summary**

**Filename** LxT\_Data.051  
**Serial Number** 5065  
**Model** SoundTrack LxT®  
**Firmware Version** 2.402

**User**  
**Location**

**Job Description****Note**

**Measurement Description** Marin Co GP HE/SE EIR - SJ2A 5/16-17/22  
**Start** 2022/05/16 8:20:00  
**Stop** 2022/05/16 12:00:08  
**Duration** 3:40:08.8  
**Run Time** 3:40:08.8  
**Pause** 0:00:00.0

**Pre Calibration** 2022/05/16 8:10:39  
**Post Calibration** 2022/05/16 12:04:07  
**Calibration Deviation** -0.05 dB

**Overall Settings**

**RMS Weight** A Weighting  
**Peak Weight** A Weighting  
**Detector** Slow  
**Preamp** PRMLxT1L  
**Microphone Correction** Off  
**Integration Method** Exponential  
**OBA Range** Normal  
**OBA Bandwidth** 1/1 and 1/3  
**OBA Freq. Weighting** A Weighting  
**OBA Max Spectrum** Bin Max  
**Overload** 122.4 dB

	<b>A</b>	<b>C</b>	<b>Z</b>
<b>Under Range Peak</b>	<b>79.0</b>	76.0	81.0 dB
<b>Under Range Limit</b>	<b>25.3</b>	25.9	31.6 dB
<b>Noise Floor</b>	16.1	16.8	22.5 dB

**Results**

**LASeq** 67.3 dB  
**LASE** 108.5 dB  
**EAS** 7.840 mPa<sup>2</sup>h  
**EAS8** 17.093 mPa<sup>2</sup>h  
**EAS40** 85.466 mPa<sup>2</sup>h  
**LApeak (max)** 2022/05/16 10:55:04 117.4 dB  
**LASmax** 2022/05/16 10:55:04 85.6 dB  
**LASmin** 2022/05/16 10:52:04 32.8 dB  
**SEA** -99.9 dB

<b>LAS &gt; 80.0 dB</b> (Exceedence Counts / Duration)	9	45.7 s
<b>LAS &gt; 90.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 125.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 135.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 140.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s

Community Noise	Ldn	LDay LNight		Lden	LDay	LEvening	LNight
		07:00- 22:00-	07:00				
	67.3	67.3	-99.9	67.3	67.3	-99.9	-99.9
LCSeq	78.8 dB						
LASeq	67.3 dB						
LCSeq - LASeq	11.5 dB						
LALeq	70.2 dB						
LAeq	67.3 dB						
LALeq - LAeq	2.9 dB						
# Overloads	9						
Overload Duration	20.2 s						
# OBA Overloads	9						
OBA Overload Duration	20.2 s						

Dose Settings		
Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results		
Dose	-99.9	0.03 %
Projected Dose	-99.9	0.06 %
TWA (Projected)	-99.9	36.0 dB
TWA (t)	-99.9	30.4 dB
Lep (t)	63.9	63.9 dB

Statistics	
LAS1.00	76.7 dB
LAS10.00	71.3 dB

LAS16.67	69.0 dB
LAS25.00	66.8 dB
LAS50.00	63.6 dB
LAS90.00	55.7 dB

**Calibration History**

<b>Preamp</b>	<b>Date</b>	<b>dB re. 1V/Pa</b>
Direct	2020/01/28 6:05:01	-28.5
PRMLxT1L	2022/05/16 12:04:05	-28.7
PRMLxT1L	2022/05/16 8:10:38	-28.6
PRMLxT1L	2022/05/16 8:10:09	-28.6
PRMLxT1L	2022/05/03 9:04:41	-28.6
PRMLxT1L	2022/05/03 7:08:55	-28.6
PRMLxT1L	2022/04/02 17:21:13	-28.5
PRMLxT1L	2022/03/31 11:12:01	-28.5
PRMLxT1L	2022/03/31 10:22:25	-28.6
PRMLxT1L	2022/03/30 19:25:42	-28.6
PRMLxT1L	2022/03/30 18:58:48	-28.6
PRMLxT1L	2022/03/30 15:22:06	-28.5
Other	2022/03/29 14:00:31	-28.6
Other	2022/03/29 9:47:56	-28.5
Other	2018/11/13 8:29:15	-28.3
Other	2018/11/05 14:21:01	-28.3
Other	2018/06/27 10:46:33	-28.0
Other	2018/06/27 10:46:16	-28.0

*Detailed calibration records available upon request*



**Summary**

**Filename** LxT\_Data.052  
**Serial Number** 5065  
**Model** SoundTrack LxT®  
**Firmware Version** 2.402

**User**  
**Location**  
**Job Description**

**Note**  
**Measurement Description** Marin Co GP HE/SE EIR - SJ2A 5/16-17/22  
**Start** 2022/05/16 14:10:00  
**Stop** 2022/05/16 15:25:11  
**Duration** 1:15:11.3  
**Run Time** 1:15:11.3  
**Pause** 0:00:00.0

**Pre Calibration** 2022/05/16 14:05:36  
**Post Calibration** 2022/05/16 15:25:34  
**Calibration Deviation** -0.03 dB

**Overall Settings**

**RMS Weight** A Weighting  
**Peak Weight** A Weighting  
**Detector** Slow  
**Preamp** PRMLxT1L  
**Microphone Correction** Off  
**Integration Method** Exponential  
**OBA Range** Normal  
**OBA Bandwidth** 1/1 and 1/3  
**OBA Freq. Weighting** A Weighting  
**OBA Max Spectrum** Bin Max  
**Overload** 122.4 dB

	<b>A</b>	<b>C</b>	<b>Z</b>
<b>Under Range Peak</b>	<b>79.0</b>	76.0	81.0 dB
<b>Under Range Limit</b>	<b>25.3</b>	25.9	31.6 dB
<b>Noise Floor</b>	16.1	16.8	22.5 dB

**Results**

**LASeq** 62.1 dB  
**LASE** 98.6 dB  
**EAS** 813.582  $\mu\text{Pa}^2\text{h}$   
**EAS8** 5.194  $\text{mPa}^2\text{h}$   
**EAS40** 25.969  $\text{mPa}^2\text{h}$   
**LApeak (max)** 2022/05/16 15:25:09 121.4 dB  
**LASmax** 2022/05/16 15:25:10 88.6 dB  
**LASmin** 2022/05/16 15:11:11 25.5 dB  
**SEA** 131.4 dB

<b>LAS &gt; 80.0 dB</b> (Exceedence Counts / Duration)	3	5.6 s
<b>LAS &gt; 90.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 125.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 135.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 140.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s

Community Noise	LNight			LEvening		
	Ldn	LDay 07:00-22:00-22:00 07:00	Lden	LDay 07:00-19:00-19:00 19:00	22:00	Lden
	62.1	62.1	-99.9	62.1	62.1	-99.9
LCSeq	82.2 dB					
LASEq	62.1 dB					
LCSeq - LASEq	20.1 dB					
LALeq	69.7 dB					
LAeq	62.3 dB					
LALeq - LAeq	7.4 dB					
# Overloads	8					
Overload Duration	16.5 s					
# OBA Overloads	8					
OBA Overload Duration	16.5 s					

Dose Settings		
Dose Name	OSHA-1	OSHA-2
Exch. Rate	5	5 dB
Threshold	90	80 dB
Criterion Level	90	90 dB
Criterion Duration	8	8 h

Results		
Dose	-99.9	0.01 %
Projected Dose	-99.9	0.05 %
TWA (Projected)	-99.9	34.7 dB
TWA (t)	-99.9	21.3 dB
Lep (t)	54.1	54.1 dB

Statistics	
LAS1.00	72.6 dB
LAS10.00	67.0 dB

LAS16.67	61.1 dB
LAS25.00	53.1 dB
LAS50.00	45.5 dB
LAS90.00	41.2 dB

**Calibration History**

<b>Preamp</b>	<b>Date</b>	<b>dB re. 1V/Pa</b>
Direct	2020/01/28 6:05:01	-28.5
PRMLxT1L	2022/05/16 15:25:33	-28.7
PRMLxT1L	2022/05/16 14:05:34	-28.6
PRMLxT1L	2022/05/16 12:04:05	-28.7
PRMLxT1L	2022/05/16 8:10:38	-28.6
PRMLxT1L	2022/05/16 8:10:09	-28.6
PRMLxT1L	2022/05/03 9:04:41	-28.6
PRMLxT1L	2022/05/03 7:08:55	-28.6
PRMLxT1L	2022/04/02 17:21:13	-28.5
PRMLxT1L	2022/03/31 11:12:01	-28.5
PRMLxT1L	2022/03/31 10:22:25	-28.6
PRMLxT1L	2022/03/30 19:25:42	-28.6
Other	2022/03/29 14:00:31	-28.6
Other	2022/03/29 9:47:56	-28.5
Other	2018/11/13 8:29:15	-28.3
Other	2018/11/05 14:21:01	-28.3
Other	2018/06/27 10:46:33	-28.0
Other	2018/06/27 10:46:16	-28.0

*Detailed calibration records available upon request.*

**Summary**

**Filename** LxT\_Data.076  
**Serial Number** 3790  
**Model** SoundExpert™ LxT  
**Firmware Version** 2.402

**User**  
**Location**  
**Job Description**

**Note**

**Measurement Description** Marin Co GP HE/SE EIR - RVSA 5/17-18/22  
**Start** 17/05/2022 08:30:00  
**Stop** 17/05/2022 09:30:56  
**Duration** 1:00:56.9  
**Run Time** 1:00:56.9  
**Pause** 0:00:00.0

**Pre Calibration** 17/05/2022 08:18:41  
**Post Calibration** 17/05/2022 09:33:26  
**Calibration Deviation** -0.01 dB

**Overall Settings**

**RMS Weight** A Weighting  
**Peak Weight** A Weighting  
**Detector** Slow  
**Preamp** PRMLxT1L  
**Microphone Correction** Off  
**Integration Method** Exponential  
**OBA Range** Normal  
**OBA Bandwidth** 1/1 and 1/3  
**OBA Freq. Weighting** A Weighting  
**OBA Max Spectrum** Bin Max  
**Overload** 122.8 dB

	<b>A</b>	<b>C</b>	<b>Z</b>
<b>Under Range Peak</b>	<b>79.4</b>	76.4	81.4 dB
<b>Under Range Limit</b>	<b>24.4</b>	25.5	31.7 dB
<b>Noise Floor</b>	15.2	16.4	22.6 dB

**Results**

**LASeq** 69.1 dB  
**LASE** 104.7 dB  
**EAS** 3.294 mPa<sup>2</sup>h  
**LAp<sub>peak</sub> (max)** 17/05/2022 09:17:46 96.8 dB  
**LAS<sub>max</sub>** 17/05/2022 09:17:47 82.7 dB  
**LAS<sub>min</sub>** 17/05/2022 08:44:38 55.6 dB  
**SEA** -99.9 dB

<b>LAS &gt; 80.0 dB</b> (Exceedence Counts / Duration)	3	6.1 s
<b>LAS &gt; 90.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 125.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 135.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 140.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s

Community Noise	Ldn	LDay LNight		Lden	LDay	LEvening	LNight
		07:00- 22:00-	07:00-		19:00-	22:00-	
	69.1	69.1	-99.9	69.1	69.1	-99.9	-99.9
LCSeq	74.4 dB						
LASeq	69.1 dB						
LCSeq - LASeq	5.4 dB						
LAleq	71.0 dB						
LAeq	69.1 dB						
LAleq - LAeq	1.9 dB						
# Overloads	0						
Overload Duration	0.0 s						
# OBA Overloads	0						
OBA Overload Duration	0.0 s						

Statistics	
LAS1.00	77.2 dB
LAS10.00	73.8 dB
LAS16.67	72.0 dB
LAS25.00	69.9 dB
LAS50.00	64.2 dB
LAS90.00	59.3 dB

#### Calibration History

Preamp	Date	dB re. 1V/Pa
Direct	28/01/2020 6:13:43	-26.4
Direct	27/01/2020 13:00:51	-29.0
PRMLxT1L	17/05/2022 9:33:24	-29.1
PRMLxT1L	17/05/2022 8:18:39	-29.1
PRMLxT1L	03/05/2022 9:49:03	-29.1
PRMLxT1L	03/05/2022 9:34:56	-29.0

<b>PRMLxT1L</b>	03/05/2022 9:18:49	-29.1
<b>PRMLxT1L</b>	03/05/2022 7:06:59	-29.2
<b>PRMLxT1L</b>	02/04/2022 17:06:08	-29.0
<b>PRMLxT1L</b>	31/03/2022 11:26:36	-29.0
<b>PRMLxT1L</b>	31/03/2022 9:39:23	-29.1
<b>PRMLxT1L</b>	30/03/2022 18:58:45	-29.1
<b>PRMLxT1L</b>	30/03/2022 15:20:18	-29.0
<b>Other</b>	01/12/2019 17:09:04	-29.0

*Detailed calibration records available upon request.*

**Summary**

**Filename** LxT\_Data.078  
**Serial Number** 3790  
**Model** SoundExpert™ LxT  
**Firmware Version** 2.402

**User**  
**Location**  
**Job Description**

**Note**

**Measurement Description** Marin Co GP HE/SE EIR - RVSA 5/17-18/22  
**Start** 17/05/2022 11:00:00  
**Stop** 17/05/2022 15:04:09  
**Duration** 4:04:09.6  
**Run Time** 4:04:09.6  
**Pause** 0:00:00.0

**Pre Calibration** 17/05/2022 10:52:22  
**Post Calibration** 17/05/2022 15:05:07  
**Calibration Deviation** -0.04 dB

**Overall Settings**

**RMS Weight** A Weighting  
**Peak Weight** A Weighting  
**Detector** Slow  
**Preamp** PRMLxT1L  
**Microphone Correction** Off  
**Integration Method** Exponential  
**OBA Range** Normal  
**OBA Bandwidth** 1/1 and 1/3  
**OBA Freq. Weighting** A Weighting  
**OBA Max Spectrum** Bin Max  
**Overload** 122.8 dB

	<b>A</b>	<b>C</b>	<b>Z</b>
<b>Under Range Peak</b>	<b>79.4</b>	76.4	81.4 dB
<b>Under Range Limit</b>	<b>24.4</b>	25.5	31.7 dB
<b>Noise Floor</b>	15.2	16.4	22.6 dB

**Results**

**LASeq** 62.5 dB  
**LASE** 104.2 dB  
**EAS** 2.927 mPa<sup>2</sup>h  
**LApk (max)** 17/05/2022 13:30:49 124.2 dB  
**LASmax** 17/05/2022 13:30:49 92.8 dB  
**LASmin** 17/05/2022 12:01:37 24.5 dB  
**SEA** 134.2 dB

<b>LAS &gt; 80.0 dB</b> (Exceedence Counts / Duration)	4	9.4 s
<b>LAS &gt; 90.0 dB</b> (Exceedence Counts / Duration)	1	1.3 s
<b>LApeak &gt; 125.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 135.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 140.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s

Community Noise	Ldn	LDay LNight		Lden	LDay	LEvening	LNight
		07:00- 22:00-	07:00- 19:00				
	62.6	62.6	-99.9	62.6	62.6	-99.9	-99.9
LCSeq	84.0 dB						
LASeq	62.5 dB						
LCSeq - LASeq	21.5 dB						
LAleq	69.9 dB						
LAeq	62.5 dB						
LAleq - LAeq	7.3 dB						
# Overloads	33						
Overload Duration	110.9 s						
# OBA Overloads	33						
OBA Overload Duration	110.9 s						

Statistics	
LAS1.00	72.5 dB
LAS10.00	67.1 dB
LAS16.67	64.9 dB
LAS25.00	61.9 dB
LAS50.00	51.9 dB
LAS90.00	42.2 dB

#### Calibration History

Preamp	Date	dB re. 1V/Pa
Direct	28/01/2020 6:13:43	-26.4
Direct	27/01/2020 13:00:51	-29.0
PRMLxT1L	17/05/2022 15:05:06	-29.1
PRMLxT1L	17/05/2022 10:52:22	-29.1
PRMLxT1L	17/05/2022 9:33:24	-29.1



<b>PRMLxT1L</b>	17/05/2022 8:18:39	-29.1
<b>PRMLxT1L</b>	03/05/2022 9:49:03	-29.1
<b>PRMLxT1L</b>	03/05/2022 9:34:56	-29.0
<b>PRMLxT1L</b>	03/05/2022 9:18:49	-29.1
<b>PRMLxT1L</b>	03/05/2022 7:06:59	-29.2
<b>PRMLxT1L</b>	02/04/2022 17:06:08	-29.0
<b>PRMLxT1L</b>	31/03/2022 11:26:36	-29.0
<b>PRMLxT1L</b>	31/03/2022 9:39:23	-29.1
<b>Other</b>	01/12/2019 17:09:04	-29.0

*Detailed calibration records available upon request*

## Summary

Filename LxT\_Data.079  
Serial Number 3790  
Model SoundExpert™ LxT  
Firmware Version 2.402  
User  
Location  
Job Description  
Note  
Measurement Description Marin Co GP HE/SE EIR - RVS 5/18/22  
Start 18/05/2022 08:50:00  
Stop 18/05/2022 12:58:24  
Duration 4:08:24.4  
Run Time 4:08:24.4  
Pause 0:00:00.0

Pre Calibration 18/05/2022 08:46:42  
Post Calibration 18/05/2022 12:59:02  
Calibration Deviation 0.00 dB

## Overall Settings

RMS Weight A Weighting  
Peak Weight A Weighting  
Detector Slow  
Preamp Direct  
Microphone Correction Off  
Integration Method Exponential  
OBA Range Normal  
OBA Bandwidth 1/1 and 1/3  
OBA Freq. Weighting A Weighting  
OBA Max Spectrum Bin Max  
Overload 120.1 dB

	A	C	Z
Under Range Peak	76.4	73.4	78.4 dB
Under Range Limit	12.3	10.8	15.1 dB
Noise Floor	3.2	1.7	6.0 dB

## Results

LASeq 65.3 dB  
LASE 107.1 dB  
EAS 5.668 mPa<sup>2</sup>h  
LApeak (max) 18/05/2022 12:42:50 120.8 dB  
LASmax 18/05/2022 12:42:50 88.9 dB  
LASmin 18/05/2022 11:01:48 23.9 dB  
SEA 133.6 dB

<b>LAS &gt; 80.0 dB</b> (Exceedence Counts / Duration)	19	39.4 s
<b>LAS &gt; 90.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 125.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 135.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s
<b>LApeak &gt; 140.0 dB</b> (Exceedence Counts / Duration)	0	0.0 s

Community Noise	Ldn	LDay LNight		Lden	LDay	LEvening	LNight
		07:00- 22:00-	07:00				
	65.3	65.3	-99.9	65.3	65.3	-99.9	-99.9
LCSeq	82.1 dB						
LASeq	65.3 dB						
LCSeq - LASeq	16.7 dB						
LAleq	70.9 dB						
LAeq	65.3 dB						
LAleq - LAeq	5.6 dB						
# Overloads	20						
Overload Duration	43.0 s						
# OBA Overloads	20						
OBA Overload Duration	43.0 s						

Statistics	
LAS1.00	76.3 dB
LAS10.00	69.2 dB
LAS16.67	66.3 dB
LAS25.00	63.1 dB
LAS50.00	58.1 dB
LAS90.00	45.4 dB

#### Calibration History

Preamp	Date	dB re. 1V/Pa
Direct	28/01/2020 6:13:43	-26.4
Direct	27/01/2020 13:00:51	-29.0
PRMLxT1L	18/05/2022 12:58:50	-29.0
PRMLxT1L	18/05/2022 8:46:41	-29.0
PRMLxT1L	17/05/2022 15:05:06	-29.1
PRMLxT1L	17/05/2022 10:52:22	-29.1

<b>PRMLxT1L</b>	17/05/2022 9:33:24	-29.1
<b>PRMLxT1L</b>	17/05/2022 8:18:39	-29.1
<b>PRMLxT1L</b>	03/05/2022 9:49:03	-29.1
<b>PRMLxT1L</b>	03/05/2022 9:34:56	-29.0
<b>PRMLxT1L</b>	03/05/2022 9:18:49	-29.1
<b>PRMLxT1L</b>	03/05/2022 7:06:59	-29.2
<b>PRMLxT1L</b>	02/04/2022 17:06:08	-29.0
<b>Other</b>	01/12/2019 17:09:04	-29.0

*Detailed calibration records available upon request.*

## Marin County Housing and Safety Element Marin County, California

### Technical Noise Appendix

Prepared by: MIG, Inc.

August 2022

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## Sheet 1: ADT and DNL Comparison

Road and Segment	2019 No Project		2040 No Project		Net Change (2040 No Project to 2019 No Project)		2040 Project		Net Change (2040 Project to 2019)		Net Change (2040 Project to 2040 NP)	
	ADT	DNL 50 Ft	ADT	DNL 50 Ft	ADT	DNL 50 Ft	ADT	DNL 50 Ft	ADT	DNL 50 Ft	ADT	DNL 50 Ft
<b>Atherton Avenue</b>												
U.S. 101 to SR 37 (Sears Pt. Rd)	4,797	62.9	5,321	63.5	524	0.6	5,765	64.0	968	1.1	444	0.5
<b>Butterfield Road</b>												
Northern terminus to Sir Francis Drake Blvd	1,182	52.5	1,137	52.7	-46	0.2	1,202	52.9	20	0.4	65	0.2
<b>Center Boulevard</b>												
Claus Drive to Sir Francis Drake Boulevard	15,074	64.8	16,170	65.0	1,096	0.2	16,827	65.2	1,753	0.4	657	0.2
<b>College Avenue</b>												
Sir Francis Drake Blvd to Estelle Ave	8,210	59.2	8,412	59.5	202	0.3	8,992	59.6	783	0.4	581	0.1
<b>Corte Madera Avenue</b>												
Bahr Lane to Redwood Ave	11,573	60.9	11,211	60.7	-362	-0.2	11,449	60.6	-124	-0.3	238	-0.1
<b>Las Galinas Avenue</b>												
Miller Creek Rd to Lucas Valley Rd	6,596	59.6	5,399	58.9	-1,196	-0.7	4,992	58.3	-1,603	-1.3	-407	-0.6
Lucas Valley Rd to Freitas Pkwy	6,230	58.8	7,421	59.3	1,191	0.5	7,683	59.5	1,453	0.7	262	0.2
Freitas Pkwy to Northgate Dr	5,502	58.1	3,831	56.3	-1,671	-1.8	7,615	59.1	2,112	1	3,783	2.8

Lucas Valley Road												
Nicasio Valley Rd to Mt McKinley Rd	1,548	54.1	4,288	58.9	2,740	4.8	4,210	58.7	2,662	4.6	-78	-0.2
Mt McKinley Rd to Mt Muir Ct	2,975	60.7	5,590	63.3	2,616	2.6	5,563	63.2	2,588	2.5	-27	-0.1
Mt. Muir Court to Huckleberry Road	4,045	62.9	6,546	64.8	2,501	1.9	6,724	64.8	2,678	1.9	178	0.0
Huckleberry Rd to U.S. 101	4,113	62.1	5,692	63.4	1,578	1.3	7,113	64.3	3,000	2.2	1,422	0.9
Magnolia Avenue												
Estelle Ave to Doherty Dr	9,395	60	9,886	60.3	491	0.3	10,136	60.2	741	0.2	250	-0.1
Doherty Dr to Bahr Ln	8,414	60.4	10,429	61.5	2,016	1.1	10,818	61.5	2,404	1.1	388	0.0
Miller Creek Road												
Lucas Valley Rd to Las Galinas Ave	569	48.8	1,649	53.3	1,081	4.5	2,460	54.7	1,891	5.9	810	1.4
Las Galinas Ave to U.S. 101	7,479	59.1	6,586	58.8	-892	-0.3	7,979	59.1	500	0	1,393	0.3
Nicasio Valley Road												
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,097	60.9	4,716	64.8	2,619	3.9	4,779	64.9	2,682	4	63	0.1
Lucas Valley Rd to Sir Francis Drake Blvd	1,100	56.4	1,189	56.8	89	0.4	1,322	57.3	223	0.9	133	0.5
North San Pedro Road												
U.S. 101 to Bucks Landing	6,754	58.7	7,790	59.2	1,036	0.5	8,316	57.3	1,562	-1.4	526	-1.9

<b>Novato Boulevard</b>												
Pt. Reyes Petaluma Rd to Indian Valley	4,502	63.6	6,123	65.0	1,621	1.4	6,870	65.8	2,368	2.2	747	0.8
Indian Valley to San Marin Dr	5,872	63.6	7,146	64.4	1,274	0.8	8,209	65.2	2,337	1.6	1,063	0.8
San Marin Dr to Simmons Lane	9,263	63.3	10,176	63.6	913	0.3	11,411	64.1	2,148	0.8	1,235	0.5
Simmons Lane to Diablo Ave	9,263	65.7	10,176	66.0	913	0.3	11,411	66.5	2,148	0.8	1,235	0.5
Diablo Ave to Rowland Blvd	4,251	60.3	5,595	61.3	1,344	1.0	6,045	61.7	1,794	1.4	450	0.4
Rowland Blvd to U.S. 101	4,251	60.3	5,595	61.3	1,344	1.0	6,045	61.6	1,794	1.3	450	0.3
<b>Petaluma Point Reyes Road</b>												
San Antonio Rd to Novato Blvd	2,172	61.7	4,868	65.0	2,696	3.3	4,888	65.2	2,715	3.5	20	0.2
Novato Blvd to Nicasio Valley Rd	3,224	62.4	5,833	64.9	2,609	2.5	6,002	65.0	2,778	2.6	169	0.1
Nicasio Valley Rd to Shoreline Hwy	3,141	61.2	4,224	63.3	1,082	2.1	5,651	64.1	2,510	2.9	1,428	0.8
<b>Red Hill Avenue</b>												
Sir Francis Drake Blvd to Ross Valley Dr	26,746	68.9	27,369	69.1	623	0.2	28,310	69.3	1,564	0.4	941	0.2
<b>San Marin Drive</b>												
Novato Blvd to U.S. 101	5,044	61.7	4,602	61.7	-441	0.0	5,143	62.2	99	0.5	541	0.5



Sir Francis Drake Boulevard												
SR 1 to Platform Bridge Rd	3,328	62.8	4,043	64.2	714	1.4	4,896	65.5	1,567	2.7	853	1.3
Platform Bridge Rd to Lagunitas Rd	3,279	59.3	4,043	60.2	764	0.9	4,737	61.5	1,458	2.2	695	1.3
Lagunitas Rd to Nicasio Valley Rd	4,108	58.5	5,095	59.5	987	1.0	6,101	60.8	1,993	2.3	1,006	1.3
Nicasio Valley Rd to Olema Rd	6,543	61.3	7,270	61.8	727	0.5	8,855	62.9	2,312	1.6	1,586	1.1
Olema Rd to Red Hill Ave	13,764	63.3	14,466	63.5	702	0.2	15,605	63.9	1,840	0.6	1,139	0.4
Redwood Avenue												
Corte Madera Ave to Tamalpais Dr	10,242	60.1	10,587	60.2	345	0.1	10,720	60.1	478	0	133	-0.1
Tamalpais Drive												
Redwood Ave to U.S. 101	12,446	63.8	12,611	60.2	165	-3.6	13,205	63.9	760	0.1	594	3.7
Tomales Petaluma Road												
SR 1 to Valley Ford Rd/Spring Hill Rd	2,345	63.2	2,882	64.0	537	0.8	3,251	64.3	906	1.1	369	0.3
2 <sup>nd</sup> Street												
4 <sup>th</sup> St to 3rd St	21,990	67.8	25,193	68.6	3,203	0.8	26,132	68.8	4,142	1	939	0.2
3rd St to Hetheron St	21,990	64.5	25,193	65.3	3,203	0.8	26,132	65.5	4,142	1	939	0.2
4 <sup>th</sup> Street												
Red Hill Ave to 2 <sup>nd</sup> St	28,964	70.3	29,400	70.6	436	0.3	30,222	70.7	1,258	0.4	821	0.1
I-580												
U.S. 101 to County Limit	70,080	79.5	83,410	80.1	13,330	0.6	88,876	80.4	18,796	0.9	5,466	0.3

<b>SR-1</b>												
North County Limit to Tomales Petaluma Rd	2,526	62.8	4,032	64.4	1,505	1.6	4,512	64.9	1,986	2.1	480	0.5
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,380	61.1	3,970	64.3	1,590	3.2	4,053	64.6	1,673	3.5	83	0.3
Pt Reyes Petaluma Rd to A St	3,913	54.9	5,465	56.9	1,551	2.0	5,864	57.1	1,951	2.2	400	0.2
A Street to Sir Francis Drake Blvd	3,755	57.5	5,585	60.2	1,830	2.7	6,224	60.7	2,469	3.2	639	0.5
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	3,575	58.8	4,439	60.6	864	1.8	5,119	61.6	1,544	2.8	680	1.0
Sir Francis Drake Blvd to County Limit	12,978	70.5	15,154	70.9	2,176	0.4	15,728	71.0	2,750	0.5	574	0.1
<b>SR-37</b>												
U.S. 101 to Atherton Ave	31,900	77.6	29,807	78.0	-2,093	0.4	39,482	78.3	7,582	0.7	9,675	0.3
Atherton Ave to County Limit	33,800	75.3	41,306	75.8	7,506	0.5	39,483	76.1	5,683	0.8	-1,823	0.3
<b>SR-131</b>												
U.S. 101 to Trestle Glen Blvd	34,275	73.3	35,956	73.6	1,681	0.3	37,355	73.7	3,080	0.4	1,399	0.1

## Sheet 2: TNM 3.1 Roadway Geometry Information

Road and Segment	Average Road Width	Posted Vehicle Speed
<b>Atherton Avenue</b>		
U.S. 101 to SR 37 (Sears Pt. Rd)	34	40
<b>Butterfield Road</b>		
Northern terminus to Sir Francis Drake Blvd	40	30
<b>Center Boulevard</b>		
Claus Drive to Sir Francis Drake Boulevard	23	30
<b>College Avenue</b>		
Sir Francis Drake Blvd to Estelle Ave	43	25
<b>Corte Madera Avenue</b>		
Bahr Lane to Redwood Ave	37	25
<b>Las Galinas Avenue</b>		
Miller Creek Rd to Lucas Valley Rd	60	25
Lucas Valley Rd to Freitas Pkwy	78	25
Freitas Pkwy to Northgate Dr	45	25
<b>Lucas Valley Road</b>		
Nicasio Valley Rd to Mt McKinley Rd	34	35
Mt McKinley Rd to Mt Muir Ct	38	45
Mt. Muir Court to Huckleberry Road	36	45
Huckleberry Rd to U.S. 101	39	45
<b>Magnolia Avenue</b>		
Estelle Ave to Doherty Dr	80	25
Doherty Dr to Bahr Ln	40	25
<b>Miller Creek Road</b>		
Lucas Valley Rd to Las Galinas Ave	84	25
Las Galinas Ave to U.S. 101	84	25
<b>Nicasio Valley Road</b>		
Pt Reyes Petaluma Rd to Lucas Valley Rd	38	55
Lucas Valley Rd to Sir Francis Drake Blvd	23	45
<b>North San Pedro Road</b>		
U.S. 101 to Bucks Landing	40	25
<b>Novato Boulevard</b>		
Pt. Reyes Petaluma Rd to Indian Valley	22	50
Indian Valley to San Marin Dr	22	45
San Marin Dr to Simmons Lane	60	35
Simmons Lane to Diablo Ave	30	40
Diablo Ave to Rowland Blvd	75	40
Rowland Blvd to U.S. 101	40	35

<b>Petaluma Point Reyes Road</b>		
San Antonio Rd to Novato Blvd	25	55
Novato Blvd to Nicasio Valley Rd	25	50
Nicasio Valley Rd to Shoreline Hwy	25	50
<b>Red Hill Avenue</b>		
Sir Francis Drake Blvd to Ross Valley Dr	85	35
<b>San Marin Drive</b>		
Novato Blvd to U.S. 101	70	35
<b>Sir Francis Drake Boulevard</b>		
SR 1 to Platform Bridge Rd	23	55
Platform Bridge Rd to Lagunitas Rd	25	40
Lagunitas Rd to Nicasio Valley Rd	30	35
Nicasio Valley Rd to Olema Rd	30	35
Olema Rd to Red Hill Ave	40	30
<b>Redwood Avenue</b>		
Corte Madera Ave to Tamalpais Dr	50	25
<b>Tamalpais Drive</b>		
Redwood Ave to U.S. 101	75	30
<b>Tomales Petaluma Road</b>		
SR 1 to Valley Ford Rd/Spring Hill Rd	24	55
<b>2<sup>nd</sup> Street</b>		
4 <sup>th</sup> St to 3rd St	70	35
3rd St to Hetherton St	40	25
<b>4<sup>th</sup> Street</b>		
Red Hill Ave to 2 <sup>nd</sup> St	90	35
<b>U.S. 101</b>		
County Limit to SR 37	110	65
SR 37 to I-580	110	65
I-580 to County Limit	110	65
<b>I-580</b>		
U.S. 101 to County Limit	100	55
<b>SR-1</b>		
North County Limit to Tomales Petaluma Rd	20	55
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	20	55
Pt Reyes Petaluma Rd to A St	30	25
A Street to Sir Francis Drake Blvd	30	35
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	25	40
Sir Francis Drake Blvd to County Limit	25	55
<b>SR-37</b>		
U.S. 101 to Atherton Ave	115	65
Atherton Ave to County Limit	95	55
<b>SR-131</b>		
U.S. 101 to Trestle Glen Blvd	82	45

## Sheet 3: 2019 No Project Traffic Noise Contours

Road and Segment	Estimated DNL 50 Feet from Road Center Line	Estimated Distance from Modeled Road			
		75 DNL	70 DNL	65 DNL	60 DNL
<b>Atherton Avenue</b>					
U.S. 101 to SR 37 (Sears Pt. Rd)	62.9	3	10	31	97
<b>Butterfield Road</b>					
Northern terminus to Sir Francis Drake Blvd	52.5	0	1	3	9
<b>Center Boulevard</b>					
Claus Drive to Sir Francis Drake Boulevard	64.8	5	15	48	151
<b>College Avenue</b>					
Sir Francis Drake Blvd to Estelle Ave	59.2	1	4	13	42
<b>Corte Madera Avenue</b>					
Bahr Lane to Redwood Ave	60.9	2	6	19	62
<b>Las Galinas Avenue</b>					
Miller Creek Rd to Lucas Valley Rd	59.6	1	5	14	46
Lucas Valley Rd to Freitas Pkwy	58.8	1	4	12	38
Freitas Pkwy to Northgate Dr	58.1	1	3	10	32
<b>Lucas Valley Road</b>					
Nicasio Valley Rd to Mt McKinley Rd	54.1	0	1	4	13
Mt McKinley Rd to Mt Muir Ct	60.7	2	6	19	59
Mt. Muir Court to Huckleberry Road	62.9	3	10	31	97
Huckleberry Rd to U.S. 101	62.1	3	8	26	81
<b>Magnolia Avenue</b>					
Estelle Ave to Doherty Dr	60	2	5	16	50
Doherty Dr to Bahr Ln	60.4	2	5	17	55
<b>Miller Creek Road</b>					
Lucas Valley Rd to Las Galinas Ave	48.8	0	0	1	4
Las Galinas Ave to U.S. 101	59.1	1	4	13	41
<b>Nicasio Valley Road</b>					
Pt Reyes Petaluma Rd to Lucas Valley Rd	60.9	2	6	19	62
Lucas Valley Rd to Sir Francis Drake Blvd	56.4	1	2	7	22
<b>North San Pedro Road</b>					
U.S. 101 to Bucks Landing	58.7	1	4	12	37

<b>Novato Boulevard</b>					
Pt. Reyes Petaluma Rd to Indian Valley	63.6	4	11	36	115
Indian Valley to San Marin Dr	63.6	4	11	36	115
San Marin Dr to Simmons Lane	63.3	3	11	34	107
Simmons Lane to Diablo Ave	65.7	6	19	59	186
Diablo Ave to Rowland Blvd	60.3	2	5	17	54
Rowland Blvd to U.S. 101	60.3	2	5	17	54
<b>Petaluma Point Reyes Road</b>					
San Antonio Rd to Novato Blvd	61.7	2	7	23	74
Novato Blvd to Nicasio Valley Rd	62.4	3	9	27	87
Nicasio Valley Rd to Shoreline Hwy	61.2	2	7	21	66
<b>Red Hill Avenue</b>					
Sir Francis Drake Blvd to Ross Valley Dr	68.9	12	39	123	388
<b>San Marin Drive</b>					
Novato Blvd to U.S. 101	61.7	2	7	23	74
<b>Sir Francis Drake Boulevard</b>					
SR 1 to Platform Bridge Rd	62.8	3	10	30	95
Platform Bridge Rd to Lagunitas Rd	59.3	1	4	13	43
Lagunitas Rd to Nicasio Valley Rd	58.5	1	4	11	35
Nicasio Valley Rd to Olema Rd	61.3	2	7	21	67
Olema Rd to Red Hill Ave	63.3	3	11	34	107
<b>Redwood Avenue</b>					
Corte Madera Ave to Tamalpais Dr	60.1	2	5	16	51
<b>Tamalpais Drive</b>					
Redwood Ave to U.S. 101	63.8	4	12	38	120
<b>Tomaes Petaluma Road</b>					
SR 1 to Valley Ford Rd/Spring Hill Rd	63.2	3	10	33	104
<b>2<sup>nd</sup> Street</b>					
4 <sup>th</sup> St to 3rd St	67.8	10	30	95	301
3rd St to Hetherton St	64.5	4	14	45	141
<b>4<sup>th</sup> Street</b>					
Red Hill Ave to 2 <sup>nd</sup> St	70.3	17	54	169	536
<b>U.S. 101</b>					
County Limit to SR 37	79.5	141	446	1,409	4,456
SR 37 to I-580	81	199	629	1,991	6,295
I-580 to County Limit	80.3	169	536	1,694	5,358
<b>I-580</b>					
U.S. 101 to County Limit	79.5	141	446	1,409	4,456

SR-1					
North County Limit to Tomales Petaluma Rd	62.8	3	10	30	95
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	61.1	2	6	20	64
Pt Reyes Petaluma Rd to A St	54.9	0	2	5	15
A Street to Sir Francis Drake Blvd	57.5	1	3	9	28
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	58.8	1	4	12	38
Sir Francis Drake Blvd to County Limit	70.5	18	56	177	561

<b>SR-37</b>					
U.S. 101 to Atherton Ave	77.6	91	288	910	2,877
Atherton Ave to County Limit	75.3	54	169	536	1,694
<b>SR-131</b>					
U.S. 101 to Trestle Glen Blvd	73.3	34	107	338	1,069
<b>SMART Rail Corridor</b>					
Commuter Corridor	66	6	20	63	199
Brazos Branch Line	64	4	13	40	126



## Sheet 4: 2019 No Project Traffic Percentatges

Road and Segment	ADT	Percentage		Hourly Daytime Traffic Percent (7 AM to 10 PM)				Hourly Nighttime Traffic Percent (10 PM to 7 AM)			
		Day	Night	AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
<b>Atherton Avenue</b>											
U.S. 101 to SR 37 (Sears Pt. Rd)	4,797	86.0%	14.0%	83.5%	13.9%	0.2%	2.4%	87.16%	9.95%	0.40%	2.48%
<b>Butterfield Road</b>											
Northern terminus to Sir Francis Drake Blvd	1,182	86.8%	13.2%	90.2%	7.2%	0.0%	2.6%	91.89%	5.49%	0.01%	2.62%
<b>Center Boulevard</b>											
Claus Drive to Sir Francis Drake Boulevard	15,074	81.6%	18.4%	87.6%	9.8%	0.0%	2.5%	88.86%	8.54%	0.07%	2.53%
<b>College Avenue</b>											
Sir Francis Drake Blvd to Estelle Ave	8,210	88.6%	11.4%	88.5%	8.9%	0.0%	2.5%	91.31%	6.07%	0.01%	2.60%
<b>Corte Madera Avenue</b>											
Bahr Lane to Redwood Ave	11,573	87.3%	12.7%	85.6%	11.9%	0.1%	2.4%	88.91%	8.47%	0.08%	2.53%
<b>Las Galinas Avenue</b>											
Miller Creek Rd to Lucas Valley Rd	6,596	88.8%	11.2%	85.4%	12.0%	0.2%	2.4%	88.44%	8.74%	0.30%	2.52%
Lucas Valley Rd to Freitas Pkwy	6,230	87.2%	12.8%	88.7%	8.6%	0.2%	2.5%	90.36%	6.92%	0.14%	2.58%
Freitas Pkwy to Northgate Dr	5,502	87.8%	12.2%	87.8%	9.6%	0.1%	2.5%	89.05%	8.24%	0.18%	2.54%
<b>Lucas Valley Road</b>											
Nicasio Valley Rd to Mt McKinley Rd	1,548	91.3%	8.7%	92.6%	4.6%	0.1%	2.6%	94.23%	3.01%	0.08%	2.69%
Mt McKinley Rd to Mt Muir Ct	2,975	88.4%	11.6%	90.7%	6.7%	0.1%	2.6%	91.78%	5.57%	0.04%	2.62%
Mt. Muir Court to Huckleberry Road	4,045	87.7%	12.3%	89.0%	8.4%	0.1%	2.5%	90.51%	6.87%	0.04%	2.58%
Huckleberry Rd to U.S. 101	4,113	88.3%	11.7%	86.5%	10.9%	0.1%	2.5%	88.11%	9.28%	0.10%	2.51%
<b>Magnolia Avenue</b>											
Estelle Ave to Doherty Dr	9,395	88.9%	11.1%	86.9%	10.6%	0.0%	2.5%	91.32%	6.04%	0.04%	2.60%
Doherty Dr to Bahr Ln	8,414	88.0%	12.0%	86.1%	11.4%	0.1%	2.5%	89.78%	7.57%	0.09%	2.56%

<b>Miller Creek Road</b>											
Lucas Valley Rd to Las Galinas Ave	569	90.1%	9.9%	84.3%	13.2%	0.0%	2.4%	88.09%	9.33%	0.07%	2.51%
Las Galinas Ave to U.S. 101	7,479	89.1%	10.9%	85.2%	12.2%	0.2%	2.4%	89.13%	8.12%	0.20%	2.54%
<b>Nicasio Valley Road</b>											
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,097	90.2%	9.8%	94.5%	2.7%	0.1%	2.7%	95.99%	1.22%	0.05%	2.74%
Lucas Valley Rd to Sir Francis Drake Blvd	1,100	87.5%	12.5%	96.5%	0.8%	0.0%	2.7%	96.78%	0.45%	0.00%	2.76%
<b>North San Pedro Road</b>											
U.S. 101 to Bucks Landing	6,754	87.5%	12.5%	88.3%	9.1%	0.1%	2.5%	90.58%	6.74%	0.10%	2.58%
<b>Novato Boulevard</b>											
Pt. Reyes Petaluma Rd to Indian Valley	4,502	88.0%	12.0%	91.6%	5.7%	0.1%	2.6%	92.80%	4.47%	0.09%	2.65%
Indian Valley to San Marin Dr	5,872	87.3%	12.7%	90.3%	7.1%	0.1%	2.6%	91.77%	5.54%	0.07%	2.62%
San Marin Dr to Simmons Lane	9,263	86.1%	13.9%	88.2%	9.3%	0.0%	2.5%	90.36%	7.02%	0.04%	2.58%
Simmons Lane to Diablo Ave	9,263	86.1%	13.9%	88.2%	9.3%	0.0%	2.5%	90.36%	7.02%	0.04%	2.58%
Diablo Ave to Rowland Blvd	4,251	87.3%	12.7%	86.0%	11.5%	0.1%	2.5%	88.40%	9.00%	0.08%	2.52%
Rowland Blvd to U.S. 101	4,251	87.3%	12.7%	86.0%	11.5%	0.1%	2.5%	88.40%	9.00%	0.08%	2.52%
<b>Petaluma Point Reyes Road</b>											
San Antonio Rd to Novato Blvd	2,172	90.4%	9.6%	85.4%	11.7%	0.5%	2.4%	84.91%	11.62%	1.05%	2.42%
Novato Blvd to Nicasio Valley Rd	3,224	88.6%	11.4%	90.0%	7.2%	0.2%	2.6%	91.20%	5.85%	0.36%	2.60%
Nicasio Valley Rd to Shoreline Hwy	3,141	90.7%	9.3%	90.9%	6.3%	0.2%	2.6%	91.66%	5.41%	0.31%	2.61%
<b>Red Hill Avenue</b>											
Sir Francis Drake Blvd to Ross Valley Dr	26,746	86.5%	13.5%	85.8%	11.7%	0.1%	2.4%	89.04%	8.32%	0.10%	2.54%
<b>San Marin Drive</b>											
Novato Blvd to U.S. 101	5,044	86.4%	13.6%	86.3%	11.2%	0.1%	2.5%	88.73%	8.63%	0.11%	2.53%

<b>Sir Francis Drake Boulevard</b>											
SR 1 to Platform Bridge Rd	3,328	90.9%	9.1%	92.9%	4.2%	0.2%	2.6%	93.99%	3.20%	0.13%	2.68%
Platform Bridge Rd to Lagunitas Rd	3,279	87.7%	12.3%	93.3%	3.9%	0.1%	2.7%	94.96%	2.27%	0.07%	2.71%
Lagunitas Rd to Nicasio Valley Rd	4,108	87.4%	12.6%	92.9%	4.3%	0.1%	2.6%	94.48%	2.77%	0.05%	2.69%
Nicasio Valley Rd to Olema Rd	6,543	86.4%	13.6%	92.1%	5.2%	0.1%	2.6%	93.69%	3.61%	0.03%	2.67%
Olema Rd to Red Hill Ave	13,764	89.1%	10.9%	86.6%	10.9%	0.0%	2.5%	91.17%	6.17%	0.05%	2.60%
<b>Redwood Avenue</b>											
Corte Madera Ave to Tamalpais Dr	10,242	88.9%	11.1%	84.8%	12.8%	0.1%	2.4%	89.08%	8.30%	0.08%	2.54%
<b>Tamalpais Drive</b>											
Redwood Ave to U.S. 101	12,446	88.4%	11.6%	84.3%	13.2%	0.1%	2.4%	88.12%	9.26%	0.11%	2.51%
<b>Tomales Petaluma Road</b>											
SR 1 to Valley Ford Rd/Spring Hill Rd	2,345	85.0%	15.0%	86.0%	11.4%	0.2%	2.5%	89.60%	7.60%	0.25%	2.55%
<b>2<sup>nd</sup> Street</b>											
4 <sup>th</sup> St to 3rd St	21,990	87.9%	12.1%	84.4%	13.2%	0.1%	2.4%	88.88%	8.50%	0.08%	2.53%
3rd St to Hetheron St	21,990	87.9%	12.1%	84.4%	13.2%	0.1%	2.4%	88.88%	8.50%	0.08%	2.53%
<b>4<sup>th</sup> Street</b>											
Red Hill Ave to 2 <sup>nd</sup> St	28,964	86.8%	13.2%	85.4%	12.1%	0.1%	2.4%	88.76%	8.61%	0.10%	2.53%
<b>U.S. 101</b>											
County Limit to SR 37	102,000	78.7%	21.3%	85.4%	11.5%	0.6%	2.4%	91.10%	5.57%	0.73%	2.60%
SR 37 to I-580	180,934	81.9%	18.1%	86.2%	10.9%	0.4%	2.5%	93.20%	6.22%	0.58%	0.00%
I-580 to County Limit	142,500	82.1%	18.0%	86.8%	10.4%	0.3%	2.5%	91.07%	5.90%	0.43%	2.60%
<b>I-580</b>											
U.S. 101 to County Limit	70,080	79.6%	20.4%	83.9%	13.6%	0.2%	2.4%	91.41%	5.79%	0.19%	2.61%

SR-1											
North County Limit to Tomales Petaluma Rd	2,526	92.1%	7.9%	90.6%	0.9%	5.9%	2.6%	88.71%	1.27%	7.49%	2.53%
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,380	92.9%	7.1%	95.1%	1.9%	0.3%	2.7%	94.94%	2.09%	0.27%	2.71%
Pt Reyes Petaluma Rd to A St	3,913	92.1%	7.9%	92.6%	4.5%	0.2%	2.6%	91.97%	5.05%	0.35%	2.62%
A Street to Sir Francis Drake Blvd	3,755	92.5%	7.5%	92.8%	4.3%	0.2%	2.6%	92.89%	4.24%	0.22%	2.65%
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	3,575	92.8%	7.2%	93.1%	4.0%	0.2%	2.7%	93.49%	3.67%	0.18%	2.66%
Sir Francis Drake Blvd to County Limit	12,978	86.0%	14.0%	86.3%	11.0%	0.2%	2.5%	89.78%	7.39%	0.27%	2.56%
SR-37											
U.S. 101 to Atherton Ave	31,900	85.0%	15.0%	85.9%	11.0%	0.7%	2.5%	88.78%	7.67%	1.02%	2.53%
Atherton Ave to County Limit	33,800	84.9%	15.2%	85.5%	11.4%	0.7%	2.4%	88.65%	7.81%	1.01%	2.53%
SR-131											
U.S. 101 to Trestle Glen Blvd	34,275	86.6%	13.4%	82.3%	15.2%	0.1%	2.4%	85.51%	11.90%	0.15%	2.44%

## Sheet 5: 2019 No Project Traffic Volumes

Road and Segment	ADT	Hourly Daytime Traffic Volumes (7 AM to 10 PM)				Hourly Nighttime Traffic Volumes (10 PM to 7 AM)			
		AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
<b>Atherton Avenue</b>									
U.S. 101 to SR 37 (Sears Pt. Rd)	4,797	3,443	574	9	98	586	67	3	17
<b>Butterfield Road</b>									
Northern terminus to Sir Francis Drake Blvd	1,182	926	74	0	26	143	9	0	4
<b>Center Boulevard</b>									
Claus Drive to Sir Francis Drake Boulevard	15,074	10,779	1,207	5	307	2,466	237	2	70
<b>College Avenue</b>									
Sir Francis Drake Blvd to Estelle Ave	8,210	6,438	648	2	184	856	57	0	24
<b>Corte Madera Avenue</b>									
Bahr Lane to Redwood Ave	11,573	8,642	1,203	5	246	1,312	125	1	37
<b>Las Galinas Avenue</b>									
Miller Creek Rd to Lucas Valley Rd	6,596	4,999	700	12	142	656	65	2	19
Lucas Valley Rd to Freitas Pkwy	6,230	4,818	467	9	137	722	55	1	21
Freitas Pkwy to Northgate Dr	5,502	4,245	462	6	121	595	55	1	17
<b>Lucas Valley Road</b>									
Nicasio Valley Rd to Mt McKinley Rd	1,548	1,310	65	2	37	126	4	0	4
Mt McKinley Rd to Mt Muir Ct	2,975	2,384	175	2	68	318	19	0	9
Mt. Muir Court to Huckleberry Road	4,045	3,158	298	2	90	450	34	0	13
Huckleberry Rd to U.S. 101	4,113	3,144	397	3	90	423	45	0	12
<b>Magnolia Avenue</b>									
Estelle Ave to Doherty Dr	9,395	7,256	887	4	207	951	63	0	27
Doherty Dr to Bahr Ln	8,414	6,372	846	4	182	907	76	1	26
<b>Miller Creek Road</b>									
Lucas Valley Rd to Las Galinas Ave	569	432	68	0	12	50	5	0	1
Las Galinas Ave to U.S. 101	7,479	5,674	815	10	162	729	66	2	21
<b>Nicasio Valley Road</b>									
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,097	1,788	51	2	51	197	3	0	6
Lucas Valley Rd to Sir Francis Drake Blvd	1,100	928	8	0	26	133	1	0	4
<b>North San Pedro Road</b>									
U.S. 101 to Bucks Landing	6,754	5,218	536	4	149	767	57	1	22

<b>Novato Boulevard</b>									
Pt. Reyes Petaluma Rd to Indian Valley	4,502	3,632	225	3	104	500	24	0	14
Indian Valley to San Marin Dr	5,872	4,630	363	3	132	682	41	1	19
San Marin Dr to Simmons Lane	9,263	7,031	741	3	200	1,163	90	1	33
Simmons Lane to Diablo Ave	9,263	7,031	741	3	200	1,163	90	1	33
Diablo Ave to Rowland Blvd	4,251	3,190	428	2	91	477	49	0	14
Rowland Blvd to U.S. 101	4,251	3,190	428	2	91	477	49	0	14
<b>Petaluma Point Reyes Road</b>									
San Antonio Rd to Novato Blvd	2,172	1,676	230	10	48	178	24	2	5
Novato Blvd to Nicasio Valley Rd	3,224	2,569	207	6	73	336	22	1	10
Nicasio Valley Rd to Shoreline Hwy	3,141	2,590	181	6	74	267	16	1	8
<b>Red Hill Avenue</b>									
Sir Francis Drake Blvd to Ross Valley Dr	26,746	19,847	2,704	14	566	3,218	301	4	92
<b>San Marin Drive</b>									
Novato Blvd to U.S. 101	5,044	3,759	488	3	107	609	59	1	17
<b>Sir Francis Drake Boulevard</b>									
SR 1 to Platform Bridge Rd	3,328	2,811	128	5	80	285	10	0	8
Platform Bridge Rd to Lagunitas Rd	3,279	2,685	112	3	77	382	9	0	11
Lagunitas Rd to Nicasio Valley Rd	4,108	3,336	156	3	95	489	14	0	14
Nicasio Valley Rd to Olema Rd	6,543	5,210	293	3	148	833	32	0	24
Olema Rd to Red Hill Ave	13,764	10,622	1,339	6	303	1,363	92	1	39
<b>Redwood Avenue</b>									
Corte Madera Ave to Tamalpais Dr	10,242	7,714	1,161	7	220	1,017	95	1	29
<b>Tamalpais Drive</b>									
Redwood Ave to U.S. 101	12,446	9,279	1,454	9	264	1,268	133	2	36
<b>Tomaes Petaluma Road</b>									
SR 1 to Valley Ford Rd/Spring Hill Rd	2,345	1,714	227	4	49	315	27	1	9
<b>2<sup>nd</sup> Street</b>									
4 <sup>th</sup> St to 3rd St	21,990	16,298	2,545	14	465	2,373	227	2	68
3rd St to Hetherton St	21,990	16,298	2,545	14	465	2,373	227	2	68
<b>4<sup>th</sup> Street</b>									
Red Hill Ave to 2 <sup>nd</sup> St	28,964	21,460	3,053	16	612	3,394	329	4	97
<b>U.S. 101</b>									
County Limit to SR 37	102,000	68,589	9,228	514	1,960	19,755	1,208	158	564
SR 37 to I-580	180,934	127,689	16,146	652	3,644	30,573	2,040	190	0
I-580 to County Limit	142,500	101,534	12,101	398	2,900	23,295	1,509	110	665
<b>I-580</b>									
U.S. 101 to County Limit	70,080	46,797	7,570	84	1,333	13,068	828	27	373

<b>SR-1</b>									
North County Limit to Tomales Petaluma Rd	2,526	2,109	20	138	60	176	3	15	5
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,380	2,103	42	7	60	160	4	0	5
Pt Reyes Petaluma Rd to A St	3,913	3,338	163	9	95	284	16	1	8
A Street to Sir Francis Drake Blvd	3,755	3,223	151	8	92	262	12	1	7
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	3,575	3,089	134	7	88	240	9	0	7
Sir Francis Drake Blvd to County Limit	12,978	9,638	1,227	23	275	1,630	134	5	46
<b>SR-37</b>									
U.S. 101 to Atherton Ave	23,281	2,972	201	664	24,076	4,245	367	49	121
Atherton Ave to County Limit	33,800	3,269	201	688	25,424	4,540	400	52	130
<b>SR-131</b>									
U.S. 101 to Trestle Glen Blvd	34,275	24,437	4,517	27	697	3,930	547	7	112

## Sheet 6: 2019 Project Traffic Noise Contours

Road and Segment	Estimated DNL 50	Estimated Distance from Modeled Road			
		75 DNL	70 DNL	65 DNL	60 DNL
<b>Atherton Avenue</b>					
U.S. 101 to SR 37 (Sears Pt. Rd)	63.5	4	11	35	112
<b>Butterfield Road</b>					
Northern terminus to Sir Francis Drake Blvd	52.7	0	1	3	9
<b>Center Boulevard</b>					
Claus Drive to Sir Francis Drake Boulevard	64.9	5	15	49	155
<b>College Avenue</b>					
Sir Francis Drake Blvd to Estelle Ave	59.2	1	4	13	42
<b>Corte Madera Avenue</b>					
Bahr Lane to Redwood Ave	60.6	2	6	18	57
<b>Las Galinas Avenue</b>					
Miller Creek Rd to Lucas Valley Rd	60.4	2	5	17	55
Lucas Valley Rd to Freitas Pkwy	59.5	1	4	14	45
Freitas Pkwy to Northgate Dr	58.8	1	4	12	38
<b>Lucas Valley Road</b>					
Nicasio Valley Rd to Mt McKinley Rd	56.4	1	2	7	22
Mt McKinley Rd to Mt Muir Ct	61.6	2	7	23	72
Mt. Muir Court to Huckleberry Road	63.5	4	11	35	112
Huckleberry Rd to U.S. 101	63.9	4	12	39	123
<b>Magnolia Avenue</b>					
Estelle Ave to Doherty Dr	60.1	2	5	16	51
Doherty Dr to Bahr Ln	61.3	2	7	21	67
<b>Miller Creek Road</b>					
Lucas Valley Rd to Las Galinas Ave	50.8	0	1	2	6
Las Galinas Ave to U.S. 101	59.9	2	5	15	49
<b>Nicasio Valley Road</b>					
Pt Reyes Petaluma Rd to Lucas Valley Rd	61.9	2	8	24	77
Lucas Valley Rd to Sir Francis Drake Blvd	57.1	1	3	8	26
<b>North San Pedro Road</b>					
U.S. 101 to Bucks Landing	59.5	1	4	14	45
<b>Novato Boulevard</b>					
Pt. Reyes Petaluma Rd to Indian Valley	64.2	4	13	42	132
Indian Valley to San Marin Dr	64.2	4	13	42	132
San Marin Dr to Simmons Lane	63.4	3	11	35	109
Simmons Lane to Diablo Ave	65.8	6	19	60	190
Diablo Ave to Rowland Blvd	60.5	2	6	18	56
Rowland Blvd to U.S. 101	60.5	2	6	18	56
<b>Petaluma Point Reyes Road</b>					
San Antonio Rd to Novato Blvd	63	3	10	32	100
Novato Blvd to Nicasio Valley Rd	63.4	3	11	35	109



Nicasio Valley Rd to Shoreline Hwy	62.4	3	9	27	87
<b>Red Hill Avenue</b>					
Sir Francis Drake Blvd to Ross Valley Dr	69.1	13	41	129	406
<b>San Marin Drive</b>					
Novato Blvd to U.S. 101	61.8	2	8	24	76
<b>Sir Francis Drake Boulevard</b>					
SR 1 to Platform Bridge Rd	64	4	13	40	126
Platform Bridge Rd to Lagunitas Rd	60	2	5	16	50
Lagunitas Rd to Nicasio Valley Rd	59.2	1	4	13	42
Nicasio Valley Rd to Olema Rd	61.9	2	8	24	77
Olema Rd to Red Hill Ave	63.4	3	11	35	109
<b>Redwood Avenue</b>					
Corte Madera Ave to Tamalpais Dr	60.2	2	5	17	52
<b>Tamalpais Drive</b>					
Redwood Ave to U.S. 101	63.9	4	12	39	123
<b>Tomaes Petaluma Road</b>					
SR 1 to Valley Ford Rd/Spring Hill Rd	63.3	3	11	34	107
<b>2<sup>nd</sup> Street</b>					
4 <sup>th</sup> St to 3rd St	67.7	9	29	93	294
3rd St to Hetherton St	64.6	5	14	46	144
<b>4<sup>th</sup> Street</b>					
Red Hill Ave to 2 <sup>nd</sup> St	70.5	18	56	177	561
<b>I-580</b>					
U.S. 101 to County Limit	76.8	76	239	757	2,393
<b>SR-1</b>					
North County Limit to Tomaes Petaluma Rd	63.5	4	11	35	112
Tomaes Petaluma Rd to Pt. Reyes Petaluma Rd	61.9	2	8	24	77
Pt Reyes Petaluma Rd to A St	56.3	1	2	7	21
A Street to Sir Francis Drake Blvd	59.6	1	5	14	46
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	60.4	2	5	17	55
Sir Francis Drake Blvd to County Limit	70.9	19	62	195	615
<b>SR-37</b>					
U.S. 101 to Atherton Ave	76.2	66	208	659	2,084
Atherton Ave to County Limit	73.9	39	123	388	1,227
<b>SR-131</b>					
U.S. 101 to Trestle Glen Blvd	69.3	13	43	135	426

Sheet 7: 2019 Project Traffic Percentatges

Road and Segment	ADT	Percentage		Hourly Daytime Traffic Percent (7 AM to 10 PM)				Hourly Nighttime Traffic Percent (10 PM to 7 AM)				
		Day	Night	AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY	
<b>Atherton Avenue</b>												
U.S. 101 to SR 37 (Sears Pt. Rd)	5,460	85.1%	14.9%	83.8%	13.6%	0.2%	2.4%	88.0%	9.1%	0.3%	2.5%	
<b>Butterfield Road</b>												
Northern terminus to Sir Francis Drake Blvd	1,270	86.9%	13.1%	90.6%	6.8%	0.0%	2.6%	92.1%	5.2%	0.0%	2.6%	
<b>Center Boulevard</b>												
Claus Drive to Sir Francis Drake Boulevard	15,783	81.0%	19.0%	88.7%	8.7%	0.0%	2.5%	89.4%	8.0%	0.1%	2.5%	
<b>College Avenue</b>												
Sir Francis Drake Blvd to Estelle Ave	8,468	88.6%	11.4%	89.5%	7.9%	0.0%	2.6%	91.5%	5.8%	0.0%	2.6%	
<b>Corte Madera Avenue</b>												
Bahr Lane to Redwood Ave	11,212	87.0%	13.0%	86.3%	11.1%	0.1%	2.5%	89.6%	7.8%	0.1%	2.6%	
<b>Las Galinas Avenue</b>												
Miller Creek Rd to Lucas Valley Rd	7,651	88.8%	11.2%	84.0%	13.5%	0.2%	2.4%	88.3%	9.0%	0.2%	2.5%	
Lucas Valley Rd to Freitas Pkwy	7,009	86.4%	13.6%	87.5%	9.8%	0.1%	2.5%	90.7%	6.6%	0.1%	2.6%	
Freitas Pkwy to Northgate Dr	6,580	88.7%	11.3%	87.3%	10.1%	0.1%	2.5%	88.9%	8.5%	0.2%	2.5%	
<b>Lucas Valley Road</b>												
Nicasio Valley Rd to Mt McKinley Rd	2,386	90.6%	9.4%	91.2%	6.0%	0.1%	2.6%	92.5%	4.8%	0.1%	2.6%	
Mt McKinley Rd to Mt Muir Ct	3,576	88.0%	12.0%	90.5%	6.8%	0.1%	2.6%	92.2%	5.2%	0.0%	2.6%	
Mt. Muir Court to Huckleberry Road	4,547	87.3%	12.7%	88.9%	8.5%	0.1%	2.5%	91.0%	6.4%	0.0%	2.6%	
Huckleberry Rd to U.S. 101	5,929	87.1%	12.9%	86.6%	10.8%	0.1%	2.5%	89.0%	8.4%	0.1%	2.5%	

<b>Magnolia Avenue</b>											
Estelle Ave to Doherty Dr	9,647	88.8%	11.2%	87.5%	10.0%	0.0%	2.5%	91.6%	5.8%	0.0%	2.6%
Doherty Dr to Bahr Ln	10,420	87.6%	12.4%	86.7%	10.7%	0.1%	2.5%	90.1%	7.2%	0.1%	2.6%
<b>Miller Creek Road</b>											
Lucas Valley Rd to Las Galinas Ave	923	88.0%	12.0%	86.0%	11.5%	0.0%	2.5%	89.6%	7.8%	0.1%	2.6%
Las Galinas Ave to U.S. 101	8,843	89.5%	10.5%	84.3%	13.1%	0.1%	2.4%	88.9%	8.4%	0.2%	2.5%
<b>Nicasio Valley Road</b>											
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,622	90.4%	9.6%	94.2%	3.0%	0.1%	2.7%	95.8%	1.4%	0.1%	2.7%
Lucas Valley Rd to Sir Francis Drake Blvd	1,212	86.5%	13.5%	96.2%	1.1%	0.0%	2.7%	96.7%	0.5%	0.0%	2.8%
<b>North San Pedro Road</b>											
U.S. 101 to Bucks Landing	7,881	86.3%	13.7%	88.5%	8.9%	0.1%	2.5%	91.0%	6.3%	0.1%	2.6%
<b>Novato Boulevard</b>											
Pt. Reyes Petaluma Rd to Indian Valley	5,267	88.4%	11.6%	92.1%	5.2%	0.1%	2.6%	92.9%	4.4%	0.1%	2.6%
Indian Valley to San Marin Dr	6,828	87.2%	12.8%	90.9%	6.5%	0.0%	2.6%	92.2%	5.1%	0.1%	2.6%
San Marin Dr to Simmons Lane	9,683	85.9%	14.1%	88.6%	8.8%	0.0%	2.5%	90.7%	6.7%	0.0%	2.6%
Simmons Lane to Diablo Ave	9,683	85.9%	14.1%	88.6%	8.8%	0.0%	2.5%	90.7%	6.7%	0.0%	2.6%
Diablo Ave to Rowland Blvd	4,558	87.9%	12.1%	86.2%	11.3%	0.1%	2.5%	88.5%	8.9%	0.1%	2.5%
Rowland Blvd to U.S. 101	4,558	87.9%	12.1%	86.2%	11.3%	0.1%	2.5%	88.5%	8.9%	0.1%	2.5%
<b>Petaluma Point Reyes Road</b>											
San Antonio Rd to Novato Blvd	2,886	88.6%	11.4%	87.2%	9.9%	0.4%	2.5%	88.0%	8.7%	0.7%	2.5%
Novato Blvd to Nicasio Valley Rd	4,261	89.0%	11.0%	90.9%	6.3%	0.2%	2.6%	92.0%	5.1%	0.3%	2.6%
Nicasio Valley Rd to Shoreline Hwy	4,151	90.0%	10.0%	91.9%	5.3%	0.2%	2.6%	92.8%	4.3%	0.2%	2.6%

<b>Red Hill Avenue</b>											
Sir Francis Drake Blvd to Ross Valley Dr	27,806	86.3%	13.7%	86.1%	11.4%	0.1%	2.5%	89.4%	8.0%	0.1%	2.5%
<b>San Marin Drive</b>											
Novato Blvd to U.S. 101	5,311	86.9%	13.1%	86.8%	10.7%	0.1%	2.5%	88.6%	8.8%	0.1%	2.5%
<b>Sir Francis Drake Boulevard</b>											
SR 1 to Platform Bridge Rd	4,187	89.6%	10.4%	93.4%	3.7%	0.2%	2.7%	94.6%	2.6%	0.2%	2.7%
Platform Bridge Rd to Lagunitas Rd	3,908	87.6%	12.4%	93.6%	3.6%	0.1%	2.7%	95.0%	2.2%	0.1%	2.7%
Lagunitas Rd to Nicasio Valley Rd	4,823	87.0%	13.0%	93.2%	4.0%	0.1%	2.7%	94.7%	2.5%	0.1%	2.7%
Nicasio Valley Rd to Olema Rd	7,514	85.9%	14.1%	92.4%	4.9%	0.1%	2.6%	93.9%	3.4%	0.0%	2.7%
Olema Rd to Red Hill Ave	13,981	88.2%	11.8%	87.4%	10.1%	0.0%	2.5%	91.8%	5.6%	0.0%	2.6%
<b>Redwood Avenue</b>											
Corte Madera Ave to Tamalpais Dr	10,640	88.1%	11.9%	85.4%	12.0%	0.1%	2.4%	90.0%	7.3%	0.1%	2.6%
<b>Tamalpais Drive</b>											
Redwood Ave to U.S. 101	12,998	87.8%	12.2%	85.1%	12.4%	0.1%	2.4%	89.3%	8.0%	0.1%	2.5%
<b>Tomales Petaluma Road</b>											
SR 1 to Valley Ford Rd/Spring Hill Rd	2,394	84.6%	15.4%	86.8%	10.5%	0.2%	2.5%	90.2%	7.0%	0.2%	2.6%
<b>2<sup>nd</sup> Street</b>											
4 <sup>th</sup> St to 3rd St	23,119	88.1%	11.9%	84.3%	13.3%	0.1%	2.4%	89.0%	8.4%	0.1%	2.5%
3rd St to Hetheron St	23,119	88.1%	11.9%	84.3%	13.3%	0.1%	2.4%	89.0%	8.4%	0.1%	2.5%
<b>4<sup>th</sup> Street</b>											
Red Hill Ave to 2 <sup>nd</sup> St	30,160	86.7%	13.3%	85.6%	11.9%	0.1%	2.4%	89.1%	8.3%	0.1%	2.5%

<b>U.S. 101</b>											
County Limit to Atherton Ave	40,161	77.0%	23.0%	85.3%	11.6%	0.7%	2.4%	91.5%	5.1%	0.8%	2.6%
Atherton Ave to SR 37	50,873	78.8%	21.2%	86.1%	11.0%	0.5%	2.5%	91.5%	5.3%	0.6%	2.6%
SR 37 to Lucas Valley Rd/Smith Ranch Rd	84,596	81.3%	18.2%	86.9%	10.2%	0.4%	2.5%	93.9%	5.6%	0.5%	0.0%
Lucas Valley Rd/Smith Ranch Rd to I-580	89,291	81.4%	18.6%	87.6%	9.5%	0.3%	2.5%	91.9%	5.1%	0.4%	2.6%
<b>I-580</b>											
U.S. 101 to County Limit	36,746	78.7%	21.3%	83.6%	13.9%	0.1%	2.4%	91.6%	5.6%	0.2%	2.6%
<b>SR-1</b>											
North County Limit to Tomales Petaluma Rd	3,475	90.4%	9.6%	92.4%	4.6%	0.3%	2.6%	92.3%	4.7%	0.3%	2.6%
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,578	91.0%	9.0%	95.1%	1.9%	0.3%	2.7%	95.1%	1.8%	0.4%	2.7%
Pt Reyes Petaluma Rd to A St	5,207	90.6%	9.4%	93.2%	3.9%	0.2%	2.7%	93.0%	4.0%	0.3%	2.7%
A Street to Sir Francis Drake Blvd	5,437	90.3%	9.7%	92.9%	4.2%	0.2%	2.6%	93.0%	4.1%	0.3%	2.7%
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	4,746	90.8%	9.2%	93.5%	3.7%	0.2%	2.7%	94.4%	2.7%	0.2%	2.7%
Sir Francis Drake Blvd to County Limit	14,098	85.0%	15.0%	87.6%	9.7%	0.2%	2.5%	91.2%	6.0%	0.2%	2.6%
<b>SR-37</b>											
U.S. 101 to Atherton Ave	22,956	84.7%	15.3%	86.2%	10.6%	0.7%	2.5%	89.3%	7.2%	1.0%	2.5%
Atherton Ave to County Limit	24,101	84.7%	15.3%	85.9%	11.0%	0.7%	2.4%	89.1%	7.4%	1.0%	2.5%
<b>SR-131</b>											
U.S. 101 to Trestle Glen Blvd	13,673	86.5%	13.5%	82.8%	14.7%	0.1%	2.4%	85.9%	11.5%	0.1%	2.4%

## Sheet 8: 2019 Project Traffic Volumes

Road and Segment	ADT	Hourly Daytime Traffic Volumes (7 AM to 10 PM)				Hourly Nighttime Traffic Volumes (10 PM to 7 AM)			
		AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
<b>Atherton Avenue</b>									
U.S. 101 to SR 37 (Sears Pt. Rd)	5,460	3,896	632	9	111	714	74	3	20
<b>Butterfield Road</b>									
Northern terminus to Sir Francis Drake Blvd	1,270	1,000	75	0	29	154	9	0	4
<b>Center Boulevard</b>									
Claus Drive to Sir Francis Drake Boulevard	15,783	11,352	1,112	4	324	2,673	240	2	76
<b>College Avenue</b>									
Sir Francis Drake Blvd to Estelle Ave	8,468	6,715	595	2	191	882	56	0	25
<b>Corte Madera Avenue</b>									
Bahr Lane to Redwood Ave	11,212	8,424	1,087	5	240	1,304	114	1	37
<b>Las Galinas Avenue</b>									
Miller Creek Rd to Lucas Valley Rd	7,651	5,708	915	11	163	754	77	2	21
Lucas Valley Rd to Freitas Pkwy	7,009	5,301	596	8	151	865	63	1	25
Freitas Pkwy to Northgate Dr	6,580	5,091	590	7	145	663	63	1	19
<b>Lucas Valley Road</b>									
Nicasio Valley Rd to Mt McKinley Rd	2,386	1,972	131	2	56	208	11	0	6
Mt McKinley Rd to Mt Muir Ct	3,576	2,849	216	2	81	394	22	0	11
Mt. Muir Court to Huckleberry Road	4,547	3,529	336	3	101	527	37	0	15
Huckleberry Rd to U.S. 101	5,929	4,473	559	4	127	682	65	1	19
<b>Magnolia Avenue</b>									
Estelle Ave to Doherty Dr	9,647	7,495	857	4	214	987	62	0	28
Doherty Dr to Bahr Ln	10,420	7,920	980	5	226	1,161	93	1	33
<b>Miller Creek Road</b>									
Lucas Valley Rd to Las Galinas Ave	923	698	93	0	20	100	9	0	3
Las Galinas Ave to U.S. 101	8,843	6,677	1,041	10	190	823	78	2	23
<b>Nicasio Valley Road</b>									
Pt Reyes Petaluma Rd to Lucas Valley Rd	2,622	2,234	70	2	64	241	3	0	7

Lucas Valley Rd to Sir Francis Drake Blvd	1,212	1,008	11	0	29	159	1	0	5
<b>North San Pedro Road</b>									
U.S. 101 to Bucks Landing	7,881	6,020	609	5	172	979	68	1	28
<b>Novato Boulevard</b>									
Pt. Reyes Petaluma Rd to Indian Valley	5,267	4,291	241	2	122	567	27	0	16
Indian Valley to San Marin Dr	6,828	5,408	386	3	154	808	45	1	23
San Marin Dr to Simmons Lane	9,683	7,372	732	2	210	1,240	91	1	35
Simmons Lane to Diablo Ave	9,683	7,372	732	2	210	1,240	91	1	35
Diablo Ave to Rowland Blvd	4,558	3,451	453	2	98	489	49	0	14
Rowland Blvd to U.S. 101	4,558	3,451	453	2	98	489	49	0	14
<b>Petaluma Point Reyes Road</b>									
San Antonio Rd to Novato Blvd	2,886	2,229	254	11	64	290	29	2	8
Novato Blvd to Nicasio Valley Rd	4,261	3,448	237	8	98	431	24	1	12
Nicasio Valley Rd to Shoreline Hwy	4,151	3,434	197	7	98	385	18	1	11
<b>Red Hill Avenue</b>									
Sir Francis Drake Blvd to Ross Valley Dr	27,806	20,672	2,735	13	589	3,393	304	3	97
<b>San Marin Drive</b>									
Novato Blvd to U.S. 101	5,311	4,006	493	3	114	616	61	1	18
<b>Sir Francis Drake Boulevard</b>									
SR 1 to Platform Bridge Rd	4,187	3,504	140	7	100	413	11	1	12
Platform Bridge Rd to Lagunitas Rd	3,908	3,206	123	4	91	460	11	0	13
Lagunitas Rd to Nicasio Valley Rd	4,823	3,913	168	4	112	594	16	0	17
Nicasio Valley Rd to Olema Rd	7,514	5,966	318	4	170	992	35	0	28
Olema Rd to Red Hill Ave	13,981	10,781	1,240	6	307	1,511	92	1	43
<b>Redwood Avenue</b>									
Corte Madera Ave to Tamalpais Dr	10,640	8,009	1,129	7	228	1,140	92	1	32
<b>Tamalpais Drive</b>									
Redwood Ave to U.S. 101	12,998	9,703	1,418	9	277	1,421	128	2	41
<b>Tomales Petaluma Road</b>									
SR 1 to Valley Ford Rd/Spring Hill Rd	2,394	1,759	213	3	50	332	26	1	9
<b>2<sup>nd</sup> Street</b>									
4 <sup>th</sup> St to 3rd St	23,119	17,165	2,703	14	489	2,444	232	2	70
3rd St to Hetherston St	23,119	17,165	2,703	14	489	2,444	232	2	70

<b>4<sup>th</sup> Street</b>									
Red Hill Ave to 2 <sup>nd</sup> St	30,160	22,389	3,104	15	638	3,575	332	4	102
<b>U.S. 101</b>									
County Limit to Atherton Ave	40,161	26,360	3,578	229	751	8,454	475	72	241
Atherton Ave to SR 37	50,873	34,506	4,406	200	984	9,866	568	62	281
SR 37 to Lucas Valley Rd/Smith Ranch Rd	84,596	59,781	7,027	281	1,704	14,445	864	81	0
Lucas Valley Rd/Smith Ranch Rd to I-580	89,291	63,697	6,940	224	1,816	15,265	852	63	435
<b>I-580</b>									
U.S. 101 to County Limit	36,746	24,161	4,020	42	689	7,176	442	13	205
<b>SR-1</b>									
North County Limit to Tomales Petaluma Rd	3,475	2,905	145	9	83	307	16	1	9
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	2,578	2,231	44	8	64	220	4	1	6
Pt Reyes Petaluma Rd to A St	5,207	4,399	183	11	125	454	20	2	13
A Street to Sir Francis Drake Blvd	5,437	4,562	206	10	130	491	22	2	14
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	4,746	4,026	158	9	115	413	12	1	12
Sir Francis Drake Blvd to County Limit	14,098	10,502	1,159	23	299	1,928	126	5	55
<b>SR-37</b>									
U.S. 101 to Atherton Ave	22,956	16,760	2,065	136	478	3,139	255	34	89
Atherton Ave to County Limit	24,101	17,526	2,238	142	500	3,291	275	36	94
<b>SR-131</b>									
U.S. 101 to Trestle Glen Blvd	13,673	9,791	1,742	10	279	1,591	213	3	45



## Sheet 9: 2040 No Project Traffic Noise Contours

Road and Segment	Estimated DNL 50	Estimated Distance from Modeled Road			
		75 DNL	70 DNL	65 DNL	60 DNL
<b>Atherton Avenue</b>					
U.S. 101 to SR 37 (Sears Pt. Rd)	63.5	4	11	35	112
<b>Butterfield Road</b>					
Northern terminus to Sir Francis Drake Blvd	52.7	0	1	3	9
<b>Center Boulevard</b>					
Claus Drive to Sir Francis Drake Boulevard	65.0	5	16	50	158
<b>College Avenue</b>					
Sir Francis Drake Blvd to Estelle Ave	59.5	1	4	14	45
<b>Corte Madera Avenue</b>					
Bahr Lane to Redwood Ave	60.7	2	6	19	59
<b>Las Galinas Avenue</b>					
Miller Creek Rd to Lucas Valley Rd	58.9	1	4	12	39
Lucas Valley Rd to Freitas Pkwy	59.3	1	4	13	43
Freitas Pkwy to Northgate Dr	56.3	1	2	7	21
<b>Lucas Valley Road</b>					
Nicasio Valley Rd to Mt McKinley Rd	58.9	1	4	12	39
Mt McKinley Rd to Mt Muir Ct	63.3	3	11	34	107
Mt. Muir Court to Huckleberry Road	64.8	5	15	48	151
Huckleberry Rd to U.S. 101	63.4	3	11	35	109
<b>Magnolia Avenue</b>					
Estelle Ave to Doherty Dr	60.3	2	5	17	54
Doherty Dr to Bahr Ln	61.5	2	7	22	71
<b>Miller Creek Road</b>					
Lucas Valley Rd to Las Galinas Ave	53.3	0	1	3	11
Las Galinas Ave to U.S. 101	58.8	1	4	12	38
<b>Nicasio Valley Road</b>					
Pt Reyes Petaluma Rd to Lucas Valley Rd	64.8	5	15	48	151
Lucas Valley Rd to Sir Francis Drake Blvd	56.8	1	2	8	24
<b>North San Pedro Road</b>					
U.S. 101 to Bucks Landing	59.2	1	4	13	42
<b>Novato Boulevard</b>					
Pt. Reyes Petaluma Rd to Indian Valley	65.0	5	16	50	158
Indian Valley to San Marin Dr	64.4	4	14	44	138
San Marin Dr to Simmons Lane	63.6	4	11	36	115
Simmons Lane to Diablo Ave	66.0	6	20	63	199
Diablo Ave to Rowland Blvd	61.3	2	7	21	67
Rowland Blvd to U.S. 101	61.3	2	7	21	67
<b>Petaluma Point Reyes Road</b>					
San Antonio Rd to Novato Blvd	65.0	5	16	50	158
Novato Blvd to Nicasio Valley Rd	64.9	5	15	49	155
Nicasio Valley Rd to Shoreline Hwy	63.3	3	11	34	107
<b>Red Hill Avenue</b>					
Sir Francis Drake Blvd to Ross Valley Dr	69.1	13	41	129	406

<b>San Marin Drive</b>					
Novato Blvd to U.S. 101	61.7	2	7	23	74
<b>Sir Francis Drake Boulevard</b>					
SR 1 to Platform Bridge Rd	64.2	4	13	42	132
Platform Bridge Rd to Lagunitas Rd	60.2	2	5	17	52
Lagunitas Rd to Nicasio Valley Rd	59.5	1	4	14	45
Nicasio Valley Rd to Olema Rd	61.8	2	8	24	76
Olema Rd to Red Hill Ave	63.5	4	11	35	112
<b>Redwood Avenue</b>					
Corte Madera Ave to Tamalpais Dr	60.2	2	5	17	52
<b>Tamalpais Drive</b>					
Redwood Ave to U.S. 101	60.2	2	5	17	52
<b>Tomales Petaluma Road</b>					
SR 1 to Valley Ford Rd/Spring Hill Rd	64.0	4	13	40	126
<b>2<sup>nd</sup> Street</b>					
4 <sup>th</sup> St to 3rd St	68.6	11	36	115	362
3rd St to Hetherton St	65.3	5	17	54	169
<b>4<sup>th</sup> Street</b>					
Red Hill Ave to 2 <sup>nd</sup> St	70.6	18	57	182	574
<b>U.S. 101</b>					
County Limit to SR 37	80.0	158	500	1,581	5,000
SR 37 to I-580	81.4	218	690	2,183	6,902
I-580 to County Limit	80.7	186	587	1,858	5,874
<b>I-580</b>					
U.S. 101 to County Limit	80.1	162	512	1,618	5,116
<b>SR-1</b>					
North County Limit to Tomales Petaluma Rd	64.4	4	14	44	138
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	64.3	4	13	43	135
Pt Reyes Petaluma Rd to A St	56.9	1	2	8	24
A Street to Sir Francis Drake Blvd	60.2	2	5	17	52
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	60.6	2	6	18	57
Sir Francis Drake Blvd to County Limit	70.9	19	62	195	615
<b>SR-37</b>					
U.S. 101 to Atherton Ave	78.0	100	315	998	3,155
Atherton Ave to County Limit	75.8	60	190	601	1,901
<b>SR-131</b>					
U.S. 101 to Trestle Glen Blvd	73.6	36	115	362	1,145
<b>SMART Rail Corridor</b>					
Commuter Corridor	69.0	13	40	126	397
Brazos Branch Line	68.0	10	32	100	315

## Sheet 10: 2040 No Project Traffic Percentages

Road and Segment	ADT	Percentage		Hourly Daytime Traffic Percent (7 AM to 10 PM)				Hourly Nighttime Traffic Percent (10 PM to 7 AM)			
		Day	Night	AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
<b>Atherton Avenue</b>											
U.S. 101 to SR 37 (Sears Pt. Rd)	5,321	85.9%	14.1%	82.9%	14.5%	0.3%	2.4%	86.40%	10.59%	0.55%	2.46%
<b>Butterfield Road</b>											
Northern terminus to Sir Francis Drake Blvd	1,137	86.0%	14.0%	88.9%	8.5%	0.0%	2.5%	91.21%	6.18%	0.01%	2.60%
<b>Center Boulevard</b>											
Claus Drive to Sir Francis Drake Boulevard	16,170	81.6%	18.4%	88.6%	8.8%	0.0%	2.5%	88.74%	8.64%	0.09%	2.53%
<b>College Avenue</b>											
Sir Francis Drake Blvd to Estelle Ave	8,412	88.0%	12.0%	88.9%	8.6%	0.0%	2.5%	90.75%	6.62%	0.04%	2.59%
<b>Corte Madera Avenue</b>											
Bahr Lane to Redwood Ave	11,211	87.2%	12.8%	85.8%	11.7%	0.0%	2.4%	89.16%	8.23%	0.07%	2.54%
<b>Las Galinas Avenue</b>											
Miller Creek Rd to Lucas Valley Rd	5,399	87.7%	12.3%	86.5%	10.7%	0.2%	2.5%	88.45%	8.71%	0.32%	2.52%
Lucas Valley Rd to Freitas Pkwy	7,421	87.5%	12.5%	89.4%	7.8%	0.2%	2.5%	90.94%	6.32%	0.15%	2.59%
Freitas Pkwy to Northgate Dr	3,831	88.1%	11.9%	88.5%	8.8%	0.1%	2.5%	89.93%	7.33%	0.18%	2.56%
<b>Lucas Valley Road</b>											
Nicasio Valley Rd to Mt McKinley Rd	4,288	89.4%	10.6%	94.0%	3.1%	0.2%	2.7%	93.88%	3.11%	0.33%	2.68%
Mt McKinley Rd to Mt Muir Ct	5,590	88.2%	11.8%	92.4%	4.7%	0.2%	2.6%	92.68%	4.44%	0.23%	2.64%
Mt. Muir Court to Huckleberry Road	6,546	87.9%	12.1%	91.1%	6.1%	0.2%	2.6%	91.68%	5.52%	0.19%	2.61%
Huckleberry Rd to U.S. 101	5,692	88.2%	11.8%	89.0%	8.3%	0.2%	2.5%	89.63%	7.60%	0.21%	2.55%

<b>Magnolia Avenue</b>											
Estelle Ave to Doherty Dr	9,886	88.7%	11.3%	87.6%	9.8%	0.0%	2.5%	90.87%	6.48%	0.05%	2.59%
Doherty Dr to Bahr Ln	10,429	87.9%	12.1%	85.6%	11.9%	0.0%	2.4%	89.29%	8.09%	0.07%	2.55%
<b>Miller Creek Road</b>											
Lucas Valley Rd to Las Galinas Ave	1,649	87.0%	13.0%	87.4%	10.0%	0.1%	2.5%	89.92%	7.44%	0.08%	2.56%
Las Galinas Ave to U.S. 101	6,586	86.8%	13.2%	86.5%	10.8%	0.2%	2.5%	89.28%	7.99%	0.19%	2.54%
<b>Nicasio Valley Road</b>											
Pt Reyes Petaluma Rd to Lucas Valley Rd	4,716	89.1%	10.9%	94.7%	2.4%	0.2%	2.7%	94.69%	2.33%	0.28%	2.70%
Lucas Valley Rd to Sir Francis Drake Blvd	1,189	87.4%	12.6%	96.5%	0.8%	0.0%	2.7%	96.76%	0.47%	0.00%	2.76%
<b>North San Pedro Road</b>											
U.S. 101 to Bucks Landing	7,790	87.2%	12.8%	89.2%	8.2%	0.1%	2.5%	91.31%	5.97%	0.11%	2.60%
<b>Novato Boulevard</b>											
Pt. Reyes Petaluma Rd to Indian Valley	6,123	87.9%	12.1%	92.0%	5.3%	0.1%	2.6%	92.54%	4.70%	0.12%	2.64%
Indian Valley to San Marin Dr	7,146	87.2%	12.8%	90.8%	6.5%	0.1%	2.6%	91.77%	5.52%	0.10%	2.62%
San Marin Dr to Simmons Lane	10,176	86.2%	13.8%	88.9%	8.5%	0.1%	2.5%	90.41%	6.95%	0.06%	2.58%
Simmons Lane to Diablo Ave	10,176	86.2%	13.8%	88.9%	8.5%	0.1%	2.5%	90.41%	6.95%	0.06%	2.58%
Diablo Ave to Rowland Blvd	5,595	88.6%	11.4%	86.1%	11.3%	0.1%	2.5%	88.14%	9.24%	0.11%	2.51%
Rowland Blvd to U.S. 101	5,595	88.6%	11.4%	86.1%	11.3%	0.1%	2.5%	88.14%	9.24%	0.11%	2.51%
<b>Petaluma Point Reyes Road</b>											
San Antonio Rd to Novato Blvd	4,868	88.2%	11.8%	90.3%	6.7%	0.4%	2.6%	90.54%	6.17%	0.71%	2.58%
Novato Blvd to Nicasio Valley Rd	5,833	88.0%	12.0%	92.3%	4.7%	0.3%	2.6%	92.31%	4.61%	0.45%	2.63%
Nicasio Valley Rd to Shoreline Hwy	4,224	85.5%	14.5%	92.2%	4.9%	0.3%	2.6%	93.31%	3.66%	0.37%	2.66%

<b>Red Hill Avenue</b>											
Sir Francis Drake Blvd to Ross Valley Dr	27,369	86.0%	14.0%	86.1%	11.4%	0.1%	2.5%	88.68%	8.67%	0.12%	2.53%
<b>San Marin Drive</b>											
Novato Blvd to U.S. 101	4,602	86.9%	13.1%	83.1%	14.4%	0.1%	2.4%	85.64%	11.72%	0.19%	2.44%
<b>Sir Francis Drake Boulevard</b>											
SR 1 to Platform Bridge Rd	4,043	87.6%	12.4%	94.0%	3.1%	0.2%	2.7%	94.51%	2.59%	0.21%	2.69%
Platform Bridge Rd to Lagunitas Rd	4,043	87.6%	12.4%	94.0%	3.1%	0.2%	2.7%	94.51%	2.59%	0.21%	2.69%
Lagunitas Rd to Nicasio Valley Rd	5,095	86.9%	13.1%	93.4%	3.9%	0.1%	2.7%	94.24%	2.97%	0.10%	2.69%
Nicasio Valley Rd to Olema Rd	7,270	86.3%	13.7%	92.4%	4.9%	0.1%	2.6%	93.50%	3.77%	0.06%	2.67%
Olema Rd to Red Hill Ave	14,466	88.5%	11.5%	87.2%	10.2%	0.1%	2.5%	91.29%	6.04%	0.06%	2.60%
<b>Redwood Avenue</b>											
Corte Madera Ave to Tamalpais Dr	10,587	88.2%	11.8%	85.6%	11.9%	0.1%	2.4%	89.73%	7.62%	0.09%	2.56%
<b>Tamalpais Drive</b>											
Redwood Ave to U.S. 101	12,611	88.4%	11.6%	86.0%	11.5%	0.1%	2.5%	89.03%	8.32%	0.11%	2.54%
<b>Tomales Petaluma Road</b>											
SR 1 to Valley Ford Rd/Spring Hill Rd	2,882	85.6%	14.4%	87.1%	10.2%	0.2%	2.5%	89.95%	7.23%	0.26%	2.56%
<b>2<sup>nd</sup> Street</b>											
4 <sup>th</sup> St to 3rd St	25,193	86.3%	13.7%	85.5%	12.0%	0.1%	2.4%	88.22%	9.12%	0.14%	2.51%
3rd St to Hetherton St	25,193	86.3%	13.7%	85.5%	12.0%	0.1%	2.4%	88.22%	9.12%	0.14%	2.51%
<b>4<sup>th</sup> Street</b>											
Red Hill Ave to 2 <sup>nd</sup> St	29,400	86.0%	14.0%	85.4%	12.1%	0.1%	2.4%	88.35%	9.00%	0.13%	2.52%
<b>U.S. 101</b>											
County Limit to SR 37	116,864	78.7%	21.3%	85.4%	11.5%	0.6%	2.4%	91.10%	5.57%	0.73%	2.60%
SR 37 to I-580	194,067	81.9%	18.1%	86.2%	10.9%	0.4%	2.5%	93.20%	6.22%	0.58%	0.00%
I-580 to County Limit	152,475	82.1%	18.0%	86.8%	10.4%	0.3%	2.5%	91.07%	5.90%	0.43%	2.60%

<b>I-580</b>											
U.S. 101 to County Limit	83,410	78.5%	21.5%	88.8%	8.6%	0.1%	2.5%	93.71%	3.47%	0.15%	2.67%
<b>SR-1</b>											
North County Limit to Tomales Petaluma Rd	4,032	88.2%	11.8%	92.7%	4.4%	0.3%	2.6%	93.78%	3.25%	0.30%	2.67%
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	3,970	88.0%	12.0%	95.5%	1.5%	0.3%	2.7%	95.73%	1.27%	0.28%	2.73%
Pt Reyes Petaluma Rd to A St	5,465	86.7%	13.3%	93.8%	3.3%	0.2%	2.7%	94.09%	2.92%	0.31%	2.68%
A Street to Sir Francis Drake Blvd	5,585	86.7%	13.3%	93.6%	3.5%	0.2%	2.7%	94.02%	3.00%	0.29%	2.68%
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	4,439	87.7%	12.3%	94.5%	2.6%	0.2%	2.7%	94.76%	2.29%	0.24%	2.70%
Sir Francis Drake Blvd to County Limit	15,154	83.7%	16.3%	93.3%	3.9%	0.1%	2.7%	95.00%	2.15%	0.14%	2.71%
<b>SR-37</b>											
U.S. 101 to Atherton Ave	38,579	85.4%	14.6%	90.5%	6.5%	0.5%	2.6%	91.76%	4.89%	0.73%	2.62%
Atherton Ave to County Limit	41,306	85.1%	14.9%	90.2%	6.8%	0.5%	2.6%	91.72%	4.93%	0.74%	2.61%
<b>SR-131</b>											
U.S. 101 to Trestle Glen Blvd	35,956	86.3%	13.7%	82.9%	14.6%	0.1%	2.4%	85.99%	11.37%	0.19%	2.45%

## Sheet 11: 2040 No Project Traffic Volumes

Road and Segment	ADT	Hourly Daytime Traffic Volumes (7 AM to 10 PM)				Hourly Nighttime Traffic Volumes (10 PM to 7 AM)			
		AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
<b>Atherton Avenue</b>									
U.S. 101 to SR 37 (Sears Pt. Rd)	5,321	3,787	661	13	108	650	80	4	19
<b>Butterfield Road</b>									
Northern terminus to Sir Francis Drake Blvd	1,137	869	83	0	25	145	10	0	4
<b>Center Boulevard</b>									
Claus Drive to Sir Francis Drake Boulevard	16,170	11,696	1,158	6	333	2,641	257	3	75
<b>College Avenue</b>									
Sir Francis Drake Blvd to Estelle Ave	8,412	6,575	635	2	187	918	67	0	26
<b>Corte Madera Avenue</b>									
Bahr Lane to Redwood Ave	11,211	8,386	1,145	4	239	1,281	118	1	37
<b>Las Galinas Avenue</b>									
Miller Creek Rd to Lucas Valley Rd	5,399	4,099	509	11	117	586	58	2	17
Lucas Valley Rd to Freitas Pkwy	7,421	5,810	510	11	166	841	58	1	24
Freitas Pkwy to Northgate Dr	3,831	2,990	297	5	85	408	33	1	12
<b>Lucas Valley Road</b>									
Nicasio Valley Rd to Mt McKinley Rd	4,288	3,602	119	9	103	427	14	2	12
Mt McKinley Rd to Mt Muir Ct	5,590	4,556	233	10	130	614	29	2	17
Mt. Muir Court to Huckleberry Road	6,546	5,245	353	10	150	723	44	2	21
Huckleberry Rd to U.S. 101	5,692	4,469	418	8	127	600	51	1	17
<b>Magnolia Avenue</b>									
Estelle Ave to Doherty Dr	9,886	7,681	861	3	219	1,019	73	1	29
Doherty Dr to Bahr Ln	10,429	7,850	1,090	4	224	1,127	102	1	32
<b>Miller Creek Road</b>									
Lucas Valley Rd to Las Galinas Ave	1,649	1,254	144	1	36	193	16	0	6
Las Galinas Ave to U.S. 101	6,586	4,949	620	9	141	775	69	2	22

<b>Nicasio Valley Road</b>									
Pt Reyes Petaluma Rd to Lucas Valley Rd	4,716	3,980	99	9	113	488	12	1	14
Lucas Valley Rd to Sir Francis Drake Blvd	1,189	1,002	8	0	29	145	1	0	4
<b>North San Pedro Road</b>									
U.S. 101 to Bucks Landing	7,790	6,060	556	6	173	909	59	1	26
<b>Novato Boulevard</b>									
Pt. Reyes Petaluma Rd to Indian Valley	6,123	4,949	284	7	141	686	35	1	20
Indian Valley to San Marin Dr	7,146	5,657	405	7	161	840	50	1	24
San Marin Dr to Simmons Lane	10,176	7,795	748	5	222	1,271	98	1	36
Simmons Lane to Diablo Ave	10,176	7,795	748	5	222	1,271	98	1	36
Diablo Ave to Rowland Blvd	5,595	4,269	561	4	122	563	59	1	16
Rowland Blvd to U.S. 101	5,595	4,269	561	4	122	563	59	1	16
<b>Petaluma Point Reyes Road</b>									
San Antonio Rd to Novato Blvd	4,868	3,879	287	19	111	519	35	4	15
Novato Blvd to Nicasio Valley Rd	5,833	4,739	242	16	135	647	32	3	18
Nicasio Valley Rd to Shoreline Hwy	4,224	3,331	176	10	95	571	22	2	16
<b>Red Hill Avenue</b>									
Sir Francis Drake Blvd to Ross Valley Dr	27,369	20,265	2,682	18	578	3,394	332	5	97
<b>San Marin Drive</b>									
Novato Blvd to U.S. 101	4,602	3,326	575	6	95	515	70	1	15
<b>Sir Francis Drake Boulevard</b>									
SR 1 to Platform Bridge Rd	4,043	3,329	111	6	95	474	13	1	14
Platform Bridge Rd to Lagunitas Rd	4,043	3,329	111	6	95	474	13	1	14
Lagunitas Rd to Nicasio Valley Rd	5,095	4,133	170	4	118	631	20	1	18
Nicasio Valley Rd to Olema Rd	7,270	5,796	307	4	165	933	38	1	27
Olema Rd to Red Hill Ave	14,466	11,172	1,308	7	318	1,517	100	1	43
<b>Redwood Avenue</b>									
Corte Madera Ave to Tamalpais Dr	10,587	7,989	1,112	7	228	1,123	95	1	32
<b>Tamalpais Drive</b>									
Redwood Ave to U.S. 101	12,611	9,585	1,278	9	273	1,304	122	2	37
<b>Tomaes Petaluma Road</b>									



SR 1 to Valley Ford Rd/Spring Hill Rd	2,882	2,150	252	5	61	372	30	1	11
<b>2<sup>nd</sup> Street</b>									
4 <sup>th</sup> St to 3rd St	25,193	18,584	2,601	21	530	3,050	315	5	87
3rd St to Hetherton St	25,193	18,584	2,601	21	530	3,050	315	5	87
<b>4<sup>th</sup> Street</b>									
Red Hill Ave to 2 <sup>nd</sup> St	29,400	21,601	3,059	20	616	3,627	370	5	103
<b>U.S. 101</b>									
County Limit to SR 37	116,864	78,612	10,573	589	2,245	22,634	1,384	181	646
SR 37 to I-580	194,067	136,957	17,318	699	3,909	32,792	2,188	204	0
I-580 to County Limit	152,475	108,642	12,948	425	3,103	24,925	1,615	118	712
<b>I-580</b>									
U.S. 101 to County Limit	83,410	58,108	5,596	92	1,656	16,829	623	27	479
<b>SR-1</b>									
North County Limit to Tomales Petaluma Rd	4,032	3,296	157	10	94	445	15	1	13
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	3,970	3,336	53	9	95	456	6	1	13
Pt Reyes Petaluma Rd to A St	5,465	4,443	158	11	127	683	21	2	19
A Street to Sir Francis Drake Blvd	5,585	4,533	171	10	129	697	22	2	20
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	4,439	3,677	102	8	105	518	13	1	15
Sir Francis Drake Blvd to County Limit	15,154	11,837	495	16	337	2,345	53	3	67
<b>SR-37</b>									
U.S. 101 to Atherton Ave	38,579	29,807	2,142	155	850	5,161	275	41	147
Atherton Ave to County Limit	41,306	31,707	2,390	176	903	5,641	303	46	161
<b>SR-131</b>									
U.S. 101 to Trestle Glen Blvd	35,956	25,712	4,528	31	744	4,248	562	9	121

## Sheet 12: 2040 Project Traffic Noise Contours

Road and Segment	Estimated DNL 50	Estimated Distance from Modeled Road			
		75 DNL	70 DNL	65 DNL	60 DNL
<b>Atherton Avenue</b>					
U.S. 101 to SR 37 (Sears Pt. Rd)	64.0	4	13	40	126
<b>Butterfield Road</b>					
Northern terminus to Sir Francis Drake Blvd	52.9	0	1	3	10
<b>Center Boulevard</b>					
Claus Drive to Sir Francis Drake Boulevard	65.2	5	17	52	166
<b>College Avenue</b>					
Sir Francis Drake Blvd to Estelle Ave	59.6	1	5	14	46
<b>Corte Madera Avenue</b>					
Bahr Lane to Redwood Ave	60.6	2	6	18	57
<b>Las Galinas Avenue</b>					
Miller Creek Rd to Lucas Valley Rd	58.3	1	3	11	34
Lucas Valley Rd to Freitas Pkwy	59.5	1	4	14	45
Freitas Pkwy to Northgate Dr	59.1	1	4	13	41
<b>Lucas Valley Road</b>					
Nicasio Valley Rd to Mt McKinley Rd	58.7	1	4	12	37
Mt McKinley Rd to Mt Muir Ct	63.2	3	10	33	104
Mt. Muir Court to Huckleberry Road	64.8	5	15	48	151
Huckleberry Rd to U.S. 101	64.3	4	13	43	135
<b>Magnolia Avenue</b>					
Estelle Ave to Doherty Dr	60.2	2	5	17	52
Doherty Dr to Bahr Ln	61.5	2	7	22	71
<b>Miller Creek Road</b>					
Lucas Valley Rd to Las Galinas Ave	54.7	0	1	5	15
Las Galinas Ave to U.S. 101	59.1	1	4	13	41
<b>Nicasio Valley Road</b>					
Pt Reyes Petaluma Rd to Lucas Valley Rd	64.9	5	15	49	155
Lucas Valley Rd to Sir Francis Drake Blvd	57.3	1	3	8	27
<b>North San Pedro Road</b>					
U.S. 101 to Bucks Landing	57.3	1	3	8	27
<b>Novato Boulevard</b>					
Pt. Reyes Petaluma Rd to Indian Valley	65.8	6	19	60	190
Indian Valley to San Marin Dr	65.2	5	17	52	166
San Marin Dr to Simmons Lane	64.1	4	13	41	129
Simmons Lane to Diablo Ave	66.5	7	22	71	223
Diablo Ave to Rowland Blvd	61.7	2	7	23	74
Rowland Blvd to U.S. 101	61.6	2	7	23	72
<b>Petaluma Point Reyes Road</b>					
San Antonio Rd to Novato Blvd	65.2	5	17	52	166
Novato Blvd to Nicasio Valley Rd	65.0	5	16	50	158
Nicasio Valley Rd to Shoreline Hwy	64.1	4	13	41	129
<b>Red Hill Avenue</b>					
Sir Francis Drake Blvd to Ross Valley Dr	69.3	13	43	135	426

<b>San Marin Drive</b>					
Novato Blvd to U.S. 101	62.2	3	8	26	83
<b>Sir Francis Drake Boulevard</b>					
SR 1 to Platform Bridge Rd	65.5	6	18	56	177
Platform Bridge Rd to Lagunitas Rd	61.5	2	7	22	71
Lagunitas Rd to Nicasio Valley Rd	60.8	2	6	19	60
Nicasio Valley Rd to Olema Rd	62.9	3	10	31	97
Olema Rd to Red Hill Ave	63.9	4	12	39	123
<b>Redwood Avenue</b>					
Corte Madera Ave to Tamalpais Dr	60.1	2	5	16	51
<b>Tamalpais Drive</b>					
Redwood Ave to U.S. 101	63.9	4	12	39	123
<b>Tomales Petaluma Road</b>					
SR 1 to Valley Ford Rd/Spring Hill Rd	64.3	4	13	43	135
<b>2<sup>nd</sup> Street</b>					
4 <sup>th</sup> St to 3rd St	68.8	12	38	120	379
3rd St to Hetherton St	65.5	6	18	56	177
<b>4<sup>th</sup> Street</b>					
Red Hill Ave to 2 <sup>nd</sup> St	70.7	19	59	186	587
<b>U.S. 101</b>					
County Limit to SR 37	80.3	169	536	1,694	5,358
SR 37 to I-580	81.4	218	690	2,183	6,902
I-580 to County Limit	80.9	195	615	1,945	6,151
<b>I-580</b>					
U.S. 101 to County Limit	80.4	173	548	1,734	5,482
<b>SR-1</b>					
North County Limit to Tomales Petaluma Rd	64.9	5	15	49	155
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	64.6	5	14	46	144
Pt Reyes Petaluma Rd to A St	57.1	1	3	8	26
A Street to Sir Francis Drake Blvd	60.7	2	6	19	59
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	61.6	2	7	23	72
Sir Francis Drake Blvd to County Limit	71.0	20	63	199	629
<b>SR-37</b>					
U.S. 101 to Atherton Ave	78.3	107	338	1,069	3,380
Atherton Ave to County Limit	76.1	64	204	644	2,037
<b>SR-131</b>					
U.S. 101 to Trestle Glen Blvd	73.7	37	117	371	1,172

## Sheet 13: 2040 Project Traffic Percentages

Road and Segment	ADT	Percentage		Hourly Daytime Traffic Percent (7 AM to 10 PM)				Hourly Nighttime Traffic Percent (10 PM to 7 AM)			
		Day	Night	AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
<b>Atherton Avenue</b>											
U.S. 101 to SR 37 (Sears Pt. Rd)	5,765	84.9%	15.1%	82.2%	15.2%	0.3%	2.3%	86.65%	10.39%	0.48%	2.47%
<b>Butterfield Road</b>											
Northern terminus to Sir Francis Drake Blvd	1,202	86.0%	14.0%	89.2%	8.2%	0.0%	2.5%	91.42%	5.96%	0.01%	2.61%
<b>Center Boulevard</b>											
Claus Drive to Sir Francis Drake Boulevard	16,827	80.1%	19.9%	89.8%	7.6%	0.0%	2.6%	89.62%	7.75%	0.08%	2.55%
<b>College Avenue</b>											
Sir Francis Drake Blvd to Estelle Ave	8,992	87.6%	12.4%	89.4%	8.0%	0.0%	2.5%	91.63%	5.73%	0.03%	2.61%
<b>Corte Madera Avenue</b>											
Bahr Lane to Redwood Ave	11,449	87.2%	12.8%	86.5%	11.0%	0.0%	2.5%	89.68%	7.69%	0.07%	2.56%
<b>Las Galinas Avenue</b>											
Miller Creek Rd to Lucas Valley Rd	4,992	89.3%	10.7%	85.7%	11.7%	0.2%	2.4%	88.85%	8.28%	0.33%	2.53%
Lucas Valley Rd to Freitas Pkwy	7,683	87.5%	12.5%	88.5%	8.8%	0.1%	2.5%	91.42%	5.84%	0.13%	2.61%
Freitas Pkwy to Northgate Dr	7,615	88.6%	11.4%	88.3%	9.1%	0.1%	2.5%	90.40%	6.86%	0.17%	2.58%
<b>Lucas Valley Road</b>											
Nicasio Valley Rd to Mt McKinley Rd	4,210	88.8%	11.2%	94.6%	2.5%	0.2%	2.7%	94.58%	2.49%	0.24%	2.70%
Mt McKinley Rd to Mt Muir Ct	5,563	88.3%	11.7%	92.9%	4.3%	0.1%	2.6%	93.25%	3.92%	0.17%	2.66%
Mt. Muir Court to Huckleberry Road	6,724	88.0%	12.0%	91.4%	5.8%	0.1%	2.6%	92.06%	5.17%	0.14%	2.62%
Huckleberry Rd to U.S. 101	7,113	88.3%	11.7%	88.9%	8.5%	0.1%	2.5%	89.57%	7.73%	0.14%	2.55%

<b>Magnolia Avenue</b>											
Estelle Ave to Doherty Dr	10,136	88.5%	11.5%	88.0%	9.5%	0.0%	2.5%	91.75%	5.60%	0.04%	2.62%
Doherty Dr to Bahr Ln	10,818	87.8%	12.2%	86.4%	11.1%	0.0%	2.5%	90.19%	7.17%	0.07%	2.57%
<b>Miller Creek Road</b>											
Lucas Valley Rd to Las Galinas Ave	2,460	86.3%	13.7%	88.9%	8.5%	0.1%	2.5%	91.72%	5.58%	0.09%	2.61%
Las Galinas Ave to U.S. 101	7,979	88.4%	11.6%	86.0%	11.4%	0.1%	2.5%	89.69%	7.57%	0.18%	2.56%
<b>Nicasio Valley Road</b>											
Pt Reyes Petaluma Rd to Lucas Valley Rd	4,779	88.4%	11.6%	95.3%	1.8%	0.2%	2.7%	95.24%	1.85%	0.20%	2.71%
Lucas Valley Rd to Sir Francis Drake Blvd	1,322	87.1%	12.9%	96.3%	1.0%	0.0%	2.7%	96.66%	0.58%	0.00%	2.76%
<b>North San Pedro Road</b>											
U.S. 101 to Bucks Landing	8,316	87.6%	12.4%	88.6%	8.8%	0.1%	2.5%	90.98%	6.31%	0.11%	2.59%
<b>Novato Boulevard</b>											
Pt. Reyes Petaluma Rd to Indian Valley	6,870	85.8%	14.2%	92.2%	5.1%	0.1%	2.6%	93.51%	3.73%	0.09%	2.67%
Indian Valley to San Marin Dr	8,209	85.9%	14.1%	90.9%	6.4%	0.1%	2.6%	92.61%	4.67%	0.08%	2.64%
San Marin Dr to Simmons Lane	11,411	85.4%	14.6%	89.7%	7.7%	0.0%	2.6%	91.30%	6.04%	0.05%	2.60%
Simmons Lane to Diablo Ave	11,411	85.4%	14.6%	89.7%	7.7%	0.0%	2.6%	91.30%	6.04%	0.05%	2.60%
Diablo Ave to Rowland Blvd	6,045	87.4%	12.6%	86.7%	10.8%	0.1%	2.5%	89.54%	7.82%	0.09%	2.55%
Rowland Blvd to U.S. 101	6,045	87.4%	12.6%	86.7%	10.8%	0.1%	2.5%	89.54%	7.82%	0.09%	2.55%
<b>Petaluma Point Reyes Road</b>											
San Antonio Rd to Novato Blvd	4,888	87.5%	12.5%	90.1%	6.9%	0.4%	2.6%	90.47%	6.37%	0.59%	2.58%
Novato Blvd to Nicasio Valley Rd	6,002	87.4%	12.6%	92.6%	4.5%	0.3%	2.6%	92.95%	4.05%	0.35%	2.65%
Nicasio Valley Rd to Shoreline Hwy	5,651	87.3%	12.7%	93.7%	3.4%	0.2%	2.7%	94.15%	2.90%	0.27%	2.68%

<b>Red Hill Avenue</b>											
Sir Francis Drake Blvd to Ross Valley Dr	28,310	85.8%	14.2%	86.1%	11.4%	0.1%	2.5%	89.02%	8.34%	0.11%	2.54%
<b>San Marin Drive</b>											
Novato Blvd to U.S. 101	5,143	85.4%	14.6%	84.1%	13.4%	0.1%	2.4%	87.73%	9.61%	0.16%	2.50%
<b>Sir Francis Drake Boulevard</b>											
SR 1 to Platform Bridge Rd	4,896	84.3%	15.7%	94.5%	2.6%	0.1%	2.7%	95.47%	1.68%	0.13%	2.72%
Platform Bridge Rd to Lagunitas Rd	4,737	82.7%	17.3%	94.3%	2.9%	0.1%	2.7%	95.67%	1.55%	0.05%	2.73%
Lagunitas Rd to Nicasio Valley Rd	6,101	82.8%	17.2%	93.9%	3.3%	0.1%	2.7%	95.38%	1.85%	0.05%	2.72%
Nicasio Valley Rd to Olema Rd	8,855	83.4%	16.6%	92.9%	4.4%	0.0%	2.6%	94.58%	2.69%	0.03%	2.70%
Olema Rd to Red Hill Ave	15,605	87.9%	12.1%	87.2%	10.2%	0.0%	2.5%	91.83%	5.50%	0.04%	2.62%
<b>Redwood Avenue</b>											
Corte Madera Ave to Tamalpais Dr	10,720	88.6%	11.4%	85.5%	12.0%	0.1%	2.4%	89.85%	7.50%	0.09%	2.56%
<b>Tamalpais Drive</b>											
Redwood Ave to U.S. 101	13,205	88.2%	11.8%	85.6%	11.8%	0.1%	2.4%	89.42%	7.93%	0.11%	2.55%
<b>Tomales Petaluma Road</b>											
SR 1 to Valley Ford Rd/Spring Hill Rd	3,251	85.8%	14.2%	88.5%	8.8%	0.2%	2.5%	90.72%	6.46%	0.24%	2.59%
<b>2<sup>nd</sup> Street</b>											
4 <sup>th</sup> St to 3rd St	26,132	85.8%	14.2%	85.5%	12.0%	0.1%	2.4%	88.60%	8.75%	0.13%	2.53%
3rd St to Hetherton St	26,132	85.8%	14.2%	85.5%	12.0%	0.1%	2.4%	88.60%	8.75%	0.13%	2.53%
<b>4<sup>th</sup> Street</b>											
Red Hill Ave to 2 <sup>nd</sup> St	30,222	85.7%	14.3%	85.5%	11.9%	0.1%	2.4%	88.72%	8.65%	0.11%	2.53%
<b>U.S. 101</b>											
County Limit to SR 37	119,820	78.7%	21.3%	85.4%	11.5%	0.6%	2.4%	91.10%	5.57%	0.73%	2.60%
SR 37 to I-580	204,227	81.9%	18.1%	86.2%	10.9%	0.4%	2.5%	93.20%	6.22%	0.58%	0.00%
I-580 to County Limit	161,124	82.1%	18.0%	86.8%	10.4%	0.3%	2.5%	91.07%	5.90%	0.43%	2.60%

<b>I-580</b>											
U.S. 101 to County Limit	88,876	78.85%	21.15%	87.81%	9.56%	0.13%	2.50%	93.10%	4.11%	0.14%	2.65%
<b>SR-1</b>											
North County Limit to Tomales Petaluma Rd	4,512	88.0%	12.0%	93.1%	4.0%	0.2%	2.7%	94.08%	3.00%	0.24%	2.68%
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	4,053	86.8%	13.2%	95.4%	1.7%	0.2%	2.7%	95.94%	1.11%	0.21%	2.73%
Pt Reyes Petaluma Rd to A St	5,864	86.0%	14.0%	94.7%	2.4%	0.2%	2.7%	94.69%	2.38%	0.24%	2.70%
A Street to Sir Francis Drake Blvd	6,224	85.8%	14.2%	94.3%	2.8%	0.2%	2.7%	94.57%	2.52%	0.22%	2.70%
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	5,119	84.9%	15.1%	94.8%	2.3%	0.2%	2.7%	95.62%	1.49%	0.16%	2.73%
Sir Francis Drake Blvd to County Limit	15,728	83.6%	16.4%	94.0%	3.2%	0.1%	2.7%	95.36%	1.79%	0.12%	2.72%
<b>SR-37</b>											
U.S. 101 to Atherton Ave	39,482	84.5%	15.6%	89.4%	7.6%	0.5%	2.6%	91.43%	5.27%	0.69%	2.61%
Atherton Ave to County Limit	42,381	84.2%	15.8%	89.1%	7.9%	0.5%	2.5%	91.33%	5.36%	0.71%	2.60%
<b>SR-131</b>											
U.S. 101 to Trestle Glen Blvd	37,355	85.9%	14.1%	83.3%	14.2%	0.1%	2.4%	86.56%	10.79%	0.18%	2.47%

## Sheet 14: 2040 Project Traffic Volumes

Road and Segment	ADT	Hourly Daytime Traffic Volumes (7 AM to 10 PM)				Hourly Nighttime Traffic Volumes (10 PM to 7 AM)			
		AUTO	MHDT	HHDT	MCY	AUTO	MHDT	HHDT	MCY
<b>Atherton Avenue</b>									
U.S. 101 to SR 37 (Sears Pt. Rd)	5,765	4,022	743	12	115	755	91	4	22
<b>Butterfield Road</b>									
Northern terminus to Sir Francis Drake Blvd	1,202	922	85	0	26	154	10	0	4
<b>Center Boulevard</b>									
Claus Drive to Sir Francis Drake Boulevard	16,827	12,094	1,029	5	345	3,006	260	3	86
<b>College Avenue</b>									
Sir Francis Drake Blvd to Estelle Ave	8,992	7,043	629	2	201	1,024	64	0	29
<b>Corte Madera Avenue</b>									
Bahr Lane to Redwood Ave	11,449	8,632	1,099	4	246	1,316	113	1	38
<b>Las Galinas Avenue</b>									
Miller Creek Rd to Lucas Valley Rd	4,992	3,820	522	8	109	474	44	2	14
Lucas Valley Rd to Freitas Pkwy	7,683	5,950	594	9	170	878	56	1	25
Freitas Pkwy to Northgate Dr	7,615	5,955	612	8	170	786	60	1	22
<b>Lucas Valley Road</b>									
Nicasio Valley Rd to Mt McKinley Rd	4,210	3,536	94	7	101	446	12	1	13
Mt McKinley Rd to Mt Muir Ct	5,563	4,564	211	7	130	607	26	1	17
Mt. Muir Court to Huckleberry Road	6,724	5,413	345	7	154	740	42	1	21
Huckleberry Rd to U.S. 101	7,113	5,584	534	7	159	743	64	1	21
<b>Magnolia Avenue</b>									
Estelle Ave to Doherty Dr	10,136	7,891	852	3	225	1,069	65	0	30
Doherty Dr to Bahr Ln	10,818	8,206	1,053	4	234	1,191	95	1	34
<b>Miller Creek Road</b>									
Lucas Valley Rd to Las Galinas Ave	2,460	1,888	180	1	54	309	19	0	9
Las Galinas Ave to U.S. 101	7,979	6,067	802	9	173	833	70	2	24
<b>Nicasio Valley Road</b>									
Pt Reyes Petaluma Rd to Lucas Valley Rd	4,779	4,025	76	7	115	530	10	1	15
Lucas Valley Rd to Sir Francis Drake Blvd	1,322	1,109	11	0	32	165	1	0	5
<b>North San Pedro Road</b>									
U.S. 101 to Bucks Landing	8,316	6,456	642	6	184	935	65	1	27
<b>Novato Boulevard</b>									
Pt. Reyes Petaluma Rd to Indian Valley	6,870	5,431	302	6	155	913	36	1	26
Indian Valley to San Marin Dr	8,209	6,414	450	6	183	1,071	54	1	31
San Marin Dr to Simmons Lane	11,411	8,737	753	4	249	1,523	101	1	43
Simmons Lane to Diablo Ave	11,411	8,737	753	4	249	1,523	101	1	43
Diablo Ave to Rowland Blvd	6,045	4,578	570	4	130	682	60	1	19
Rowland Blvd to U.S. 101	6,045	4,578	570	4	130	682	60	1	19



<b>Petaluma Point Reyes Road</b>									
San Antonio Rd to Novato Blvd	4,888	3,852	297	16	110	555	39	4	16
Novato Blvd to Nicasio Valley Rd	6,002	4,855	237	13	138	705	31	3	20
Nicasio Valley Rd to Shoreline Hwy	5,651	4,625	167	10	132	676	21	2	19
<b>Red Hill Avenue</b>									
Sir Francis Drake Blvd to Ross Valley Dr	28,310	20,915	2,762	16	596	3,579	335	4	102
<b>San Marin Drive</b>									
Novato Blvd to U.S. 101	5,143	3,692	589	5	105	660	72	1	19
<b>Sir Francis Drake Boulevard</b>									
SR 1 to Platform Bridge Rd	4,896	3,899	109	6	111	736	13	1	21
Platform Bridge Rd to Lagunitas Rd	4,737	3,696	113	3	105	785	13	0	22
Lagunitas Rd to Nicasio Valley Rd	6,101	4,744	168	3	135	1,002	19	1	29
Nicasio Valley Rd to Olema Rd	8,855	6,860	326	3	196	1,391	40	0	40
Olema Rd to Red Hill Ave	15,605	11,969	1,403	7	341	1,731	104	1	49
<b>Redwood Avenue</b>									
Corte Madera Ave to Tamalpais Dr	10,720	8,115	1,139	8	231	1,102	92	1	31
<b>Tamalpais Drive</b>									
Redwood Ave to U.S. 101	13,205	9,976	1,378	10	284	1,392	123	2	40
<b>Tomales Petaluma Road</b>									
SR 1 to Valley Ford Rd/Spring Hill Rd	3,251	2,468	246	5	70	418	30	1	12
<b>2<sup>nd</sup> Street</b>									
4 <sup>th</sup> St to 3rd St	26,132	19,172	2,693	21	546	3,278	324	5	93
3rd St to Hetherton St	26,132	19,172	2,693	21	546	3,278	324	5	93
<b>4<sup>th</sup> Street</b>									
Red Hill Ave to 2 <sup>nd</sup> St	30,222	22,168	3,095	18	632	3,822	372	5	109
<b>U.S. 101</b>									
County Limit to SR 37	119,820	80,600	10,840	604	2,302	23,207	1,419	186	662
SR 37 to I-580	119,821	144,127	18,225	736	4,113	34,509	2,303	215	0
I-580 to County Limit	119,822	114,791	13,683	449	3,279	26,339	1,706	124	752
<b>I-580</b>									
U.S. 101 to County Limit	88,876	61,536	6,700	91	1,752	17,500	773	26	498
<b>SR-1</b>									
North County Limit to Tomales Petaluma Rd	4,512	3,696	159	9	105	511	16	1	15
Tomales Petaluma Rd to Pt. Reyes Petaluma Rd	4,053	3,355	59	8	96	512	6	1	15
Pt Reyes Petaluma Rd to A St	5,864	4,778	122	9	136	776	19	2	22
A Street to Sir Francis Drake Blvd	6,224	5,039	151	9	144	834	22	2	24
Sir Francis Drake Blvd to Sir Francis Drake Blvd (South)	5,119	4,124	100	7	118	737	12	1	21
Sir Francis Drake Blvd to County Limit	15,728	12,356	420	14	352	2,465	46	3	70
<b>SR-37</b>									
U.S. 101 to Atherton Ave	39,482	29,818	2,517	157	850	5,613	324	42	160
Atherton Ave to County Limit	39,483	31,795	2,819	178	892	6,116	359	48	174
<b>SR-131</b>									
U.S. 101 to Trestle Glen Blvd	37,355	26,735	4,558	32	770	4,553	568	9	130

## Sheet 15: EMFAC Vehicle Population Information

<b>TNM 3.1/EMFAC2021 VEHICLE POPULATION INFORMATION (Unadjusted)</b>					
<b>TNM Vehicle Type</b>	<b>Vehicle Class (EMFAC2007)</b>	<b>2019 Vehicle Population</b>	<b>2019 Vehicle Population %</b>	<b>2040 Vehicle Population</b>	<b>2040 Vehicle Population %</b>
Auto	LDA	122,480	50.3%	118,384	47.1%
Auto	LDT1	14,833	6.1%	8,415	3.3%
Auto	LDT2	57,904	23.8%	66,236	26.3%
Auto	LHDT1	6,888	2.8%	7,323	2.9%
Auto	MDV	29,137	12.0%	38,707	15.4%
<b>Subtotal</b>		<b>231,241</b>	<b>95.0%</b>	<b>239,065</b>	<b>95.1%</b>
Medium Truck	LHDT2	1,333	0.5%	1,845	0.7%
Medium Truck	MHDT	2,016	0.8%	2,080	0.8%
Medium Truck	OBUS	191	0.1%	133	0.1%
Medium Truck	SBUS	165	0.1%	160	0.1%
<b>Subtotal</b>		<b>3,706</b>	<b>1.5%</b>	<b>4,218</b>	<b>1.7%</b>
Heavy Truck	HHDT	833	0.3%	1,154	0.5%
Heavy Truck	MH	807	0.3%	587	0.2%
Heavy Truck	UBUS	108	0.0%	113	0.0%
<b>Subtotal</b>		<b>1,748</b>	<b>0.7%</b>	<b>1,854</b>	<b>0.7%</b>
Motorcycle	MC	6,592	2.7%	6,288	2.5%
<b>Subtotal</b>		<b>6,592</b>	<b>2.7%</b>	<b>6,288</b>	<b>2.5%</b>
<b>TOTAL</b>		<b>243,286</b>	<b>100.0%</b>	<b>251,425</b>	<b>100.0%</b>
Table Notes:					
A) EMFAC2021 raw data file is available upon request.					

<b>TNM 3.1/EMFAC2021 VEHICLE POPULATION INFORMATION (Excluding MHDT and HHDT)</b>					
<b>TNM Vehicle Type</b>	<b>Vehicle Class (EMFAC2007)</b>	<b>2019 Vehicle Population</b>	<b>2019 Vehicle Population %</b>	<b>2040 Vehicle Population</b>	<b>2040 Vehicle Population %</b>
Auto	LDA	122,480	51.5%	118,384	48.3%
Auto	LDT1	14,833	6.2%	8,415	3.4%
Auto	LDT2	57,904	24.3%	66,236	27.0%
Auto	LHDT1	6,888	2.9%	7,323	3.0%
Auto	MDV	29,137	12.3%	38,707	15.8%
<b>Subtotal</b>		<b>231,241</b>	<b>97.2%</b>	<b>239,065</b>	<b>97.4%</b>
Motorcycle	MC	6,592	2.8%	6,288	2.6%
<b>Subtotal</b>		<b>6,592</b>	<b>2.8%</b>	<b>6,288</b>	<b>2.6%</b>
<b>TOTAL</b>		<b>237,833</b>	<b>100.0%</b>	<b>245,353</b>	<b>100.0%</b>
Table Notes:					
A) EMFAC2021 raw data file is available upon request.					

Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.

Case: SMART Commuter/Freight Existing

RESULTS			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	66	57	60
Source 1	60	57	53
Source 2	62	38	56
Source 3	61	21	55
Source 4	0	0	0
Source 5	0	0	0
Source 6	0	0	0
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below.

LAND USE CATEGORY	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers.

NOISE SOURCE PARAMETERS						
Parameter	Source 1		Source 2		Source 3	
Source Num.	Commuter Diesel Locomotive	2	Freight Locomotive	9	Freight Cars	10
Distance (source to receiver)	distance (ft)	50	distance (ft)	50	distance (ft)	50
Daytime Hours (7 AM - 10 PM)	speed (mph)	79	speed (mph)	0	speed (mph)	0
	trains/hour	2	trains/hour	0	trains/hour	0
	locos/train	1	locos/train	0	length of cars (ft) / train	0
Nighttime Hours (10 PM - 7 AM)	speed (mph)	79	speed (mph)	40	speed (mph)	45
	trains/hour	0.7	trains/hour	0.1	trains/hour	0.1
	locos/train	1	locos/train	3	length of cars (ft) / train	2000
Wheel Flats?					% of cars w/ wheel flats	
Jointed Track?	Y/N	N	Y/N	N	Y/N	
Embedded Track?	Y/N	N	Y/N	N	Y/N	
Aerial Structure?	Y/N	N	Y/N	N	Y/N	
Barrier Present?	Y/N	N	Y/N	N	Y/N	
Intervening Rows of of Buildir	number of rows		number of rows		number of rows	

Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.  
 Case: SMART Commuter/Freight Future

<b>RESULTS</b>			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	69	60	63
Source 1	63	60	56
Source 2	66	38	60
Source 3	64	21	58
Source 4	0	0	0
Source 5	0	0	0
Source 6	0	0	0
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below.

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers.

<b>NOISE SOURCE PARAMETERS</b>						
Parameter	Source 1		Source 2		Source 3	
Source Num.	Commuter Diesel Locomotive	2	Freight Locomotive	9	Freight Cars	10
Distance (source to receiver)	distance (ft)	50	distance (ft)	50	distance (ft)	50
Daytime Hours (7 AM - 10 PM)	speed (mph)	79	speed (mph)	0	speed (mph)	0
	trains/hour	4	trains/hour	0	trains/hour	0
	locos/train	1	locos/train	0	length of cars (ft) / train	0
Nighttime Hours (10 PM - 7 AM)	speed (mph)	79	speed (mph)	40	speed (mph)	40
	trains/hour	1.4	trains/hour	0.25	trains/hour	0.25
	locos/train	1	locos/train	3	length of cars (ft) / train	2000
Wheel Flats?					% of cars w/ wheel flats	
Jointed Track?	Y/N	N	Y/N	N	Y/N	
Embedded Track?	Y/N	N	Y/N	N	Y/N	
Aerial Structure?	Y/N	N	Y/N	N	Y/N	
Barrier Present?	Y/N	N	Y/N	N	Y/N	
Intervening Rows of Buildings	number of rows		number of rows		number of rows	

Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.

Case: SMART Brazos Line Existing

<b>RESULTS</b>			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	64	38	58
Source 1	62	38	56
Source 2	60	21	54
Source 3	0	0	0
Source 4	0	0	0
Source 5	0	0	0
Source 6	0	0	0
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below.

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers.

<b>NOISE SOURCE PARAMETERS</b>					
Parameter	Source 1		Source 2		Source 3
Source Num.	Freight Locomotive	9	Freight Cars	10	
Distance (source to receiver)	distance (ft)	50	distance (ft)	50	
Daytime Hours (7 AM - 10 PM)	speed (mph)		speed (mph)		
	trains/hour		trains/hour		
	locos/train		length of cars (ft) / train		
Nighttime Hours (10 PM - 7 AM)	speed (mph)	40	speed (mph)	40	
	trains/hour	0.1	trains/hour	0.1	
	locos/train	3	length of cars (ft) / train	2000	
Wheel Flats?			% of cars w/ wheel flats	5.00%	
Jointed Track?	Y/N	N	Y/N	N	
Embedded Track?	Y/N	N	Y/N	N	
Aerial Structure?	Y/N	N	Y/N	N	
Barrier Present?	Y/N	N	Y/N	N	
Intervening Rows of Buildings	number of rows		number of rows		

Noise Model Based on Federal Transit Administration General Transit Noise Assessment  
 Developed for Chicago Create Project  
 Copyright 2006, HMMH Inc.  
 Case: SMART Brazos Line Future

<b>RESULTS</b>			
Noise Source	Ldn (dB)	Leq - daytime (dB)	Leq - nighttime (dB)
All Sources	68	38	62
Source 1	66	38	60
Source 2	64	21	58
Source 3	0	0	0
Source 4	0	0	0
Source 5	0	0	0
Source 6	0	0	0
Source 7	0	0	0
Source 8	0	0	0

Enter noise receiver land use category below.

<b>LAND USE CATEGORY</b>	
Noise receiver land use category (1, 2 or 3)	2

Enter data for up to 8 noise sources below - see reference list for source numbers.

<b>NOISE SOURCE PARAMETERS</b>					
Parameter	Source 1		Source 2		Source 3
Source Num.	Freight Locomotive	9	Freight Cars	10	
Distance (source to receiver)	distance (ft)	50	distance (ft)	50	
Daytime Hours (7 AM - 10 PM)	speed (mph)		speed (mph)		
	trains/hour		trains/hour		
	locos/train		length of cars (ft) / train		
Nighttime Hours (10 PM - 7 AM)	speed (mph)	40	speed (mph)	40	
	trains/hour	0.25	trains/hour	0.25	
	locos/train	3	length of cars (ft) / train	2000	
Wheel Flats?			% of cars w/ wheel flats	5.00%	
Jointed Track?	Y/N	N	Y/N	N	
Embedded Track?	Y/N	N	Y/N	N	
Aerial Structure?	Y/N	N	Y/N	N	
Barrier Present?	Y/N	N	Y/N	N	
Intervening Rows of Buildings	number of rows		number of rows		

## **Appendix I: Supplemental Wildfire Information**

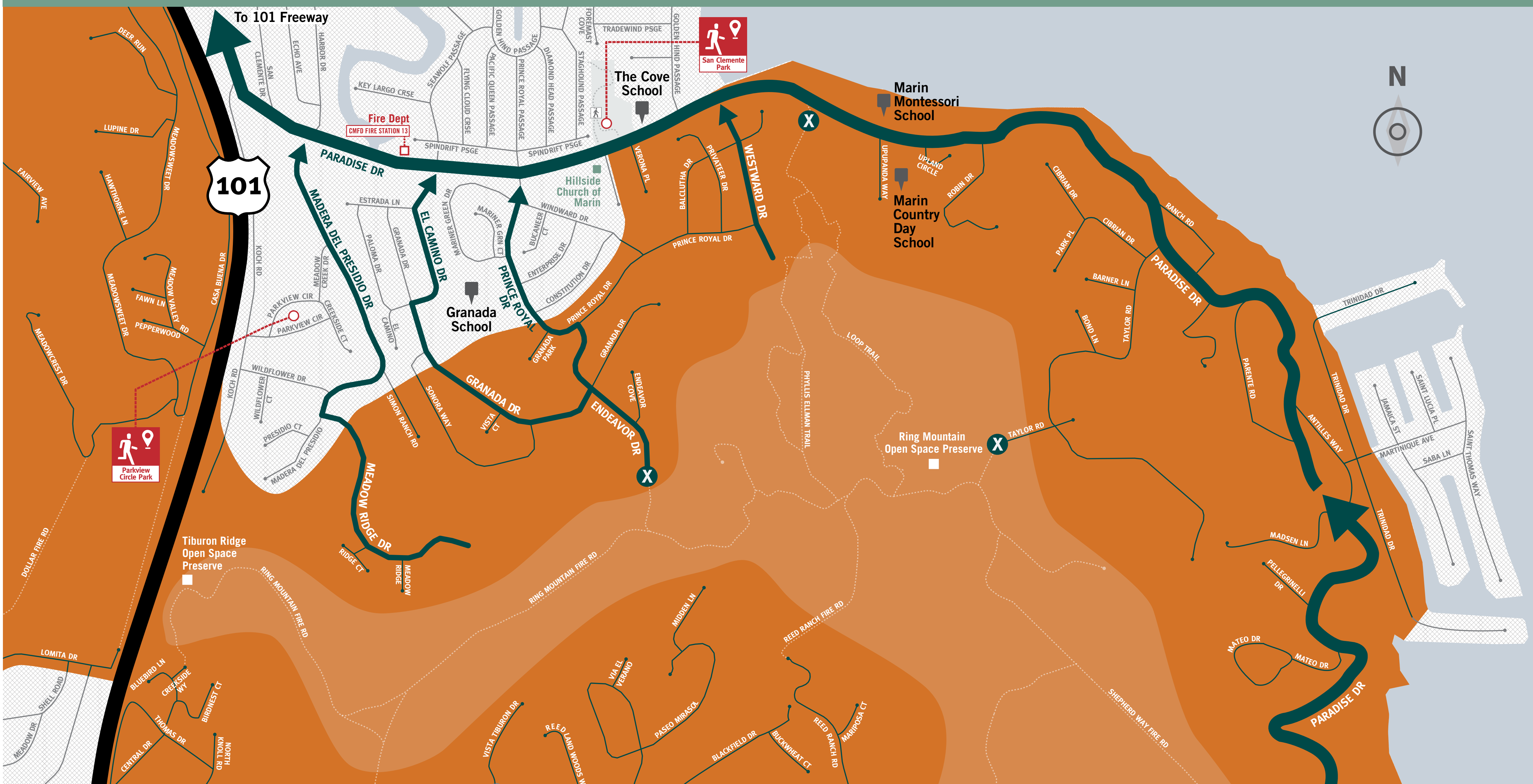
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# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



## East Corte Madera

- Severe Fire Risk
- Fire Dept
- Schools
- Evacuation Routes
- High Fire Risk
- Gate / No Access
- Temporary Refuge Area

CENTRAL MARIN FIRE DEPT  
www.centralmarinfire.org



In Marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.



SCAN THIS QR CODE TO  
DOWNLOAD THESE MAPS

### EMERGENCY TERMINOLOGY

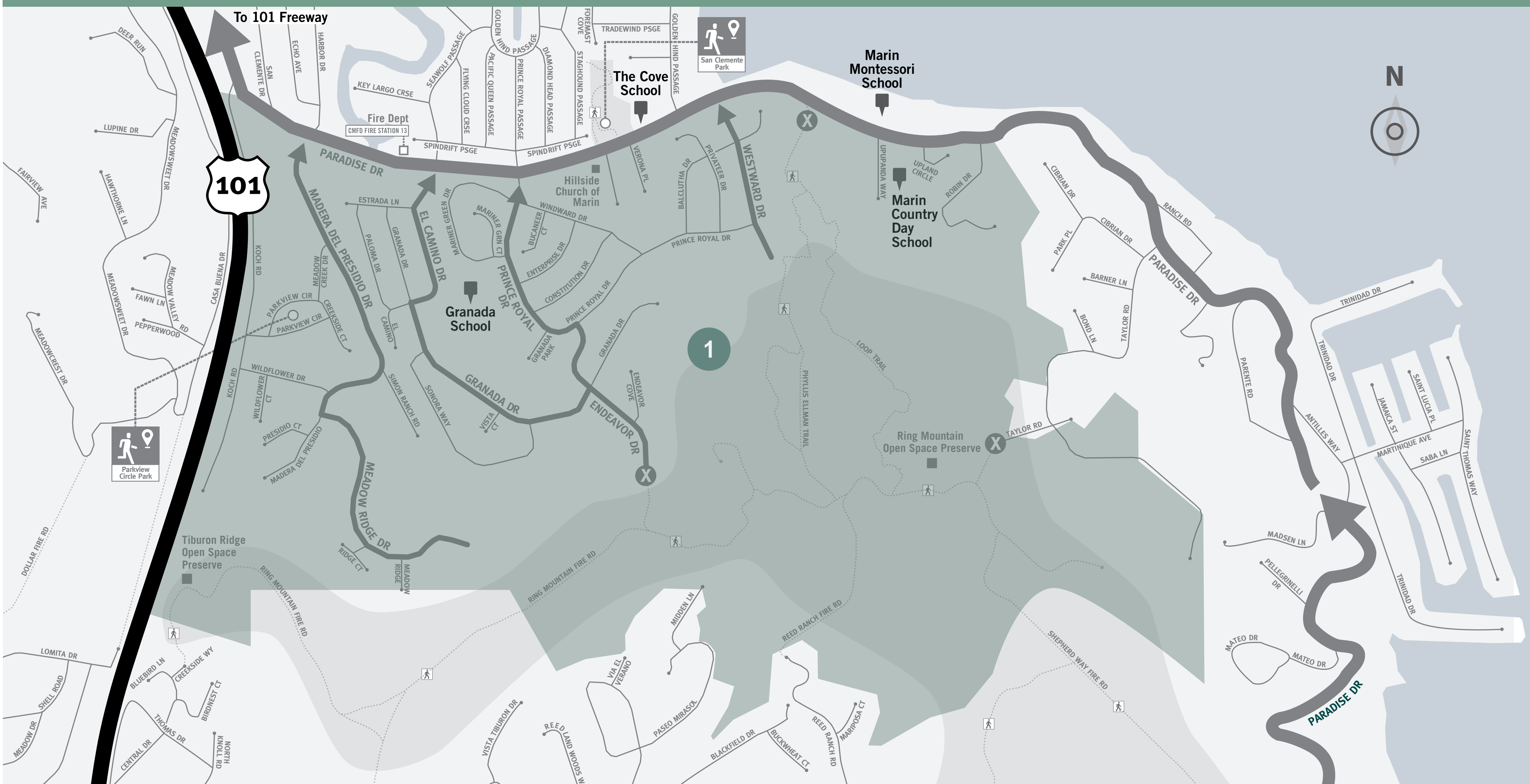
**EVACUATION ORDER: Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

**EVACUATION WARNING:** Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

**SHELTER IN PLACE: Stay** in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.

# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



ZONE AREA

1

## East Corte Madera



Download the individual zone map for alert and warning information and further sources.

### EVACUATION TIPS

#### What to wear?

Wear goggles, leather gloves, and heavy shoes/boots; protect skin with long cotton clothing; protect airway and face with an N95 mask and bandanna. Wear a hat to protect hair from embers.

#### Where to go?

Avoid hillsides. Head for a valley floor by car, away from the fire if possible.

#### Just incase...

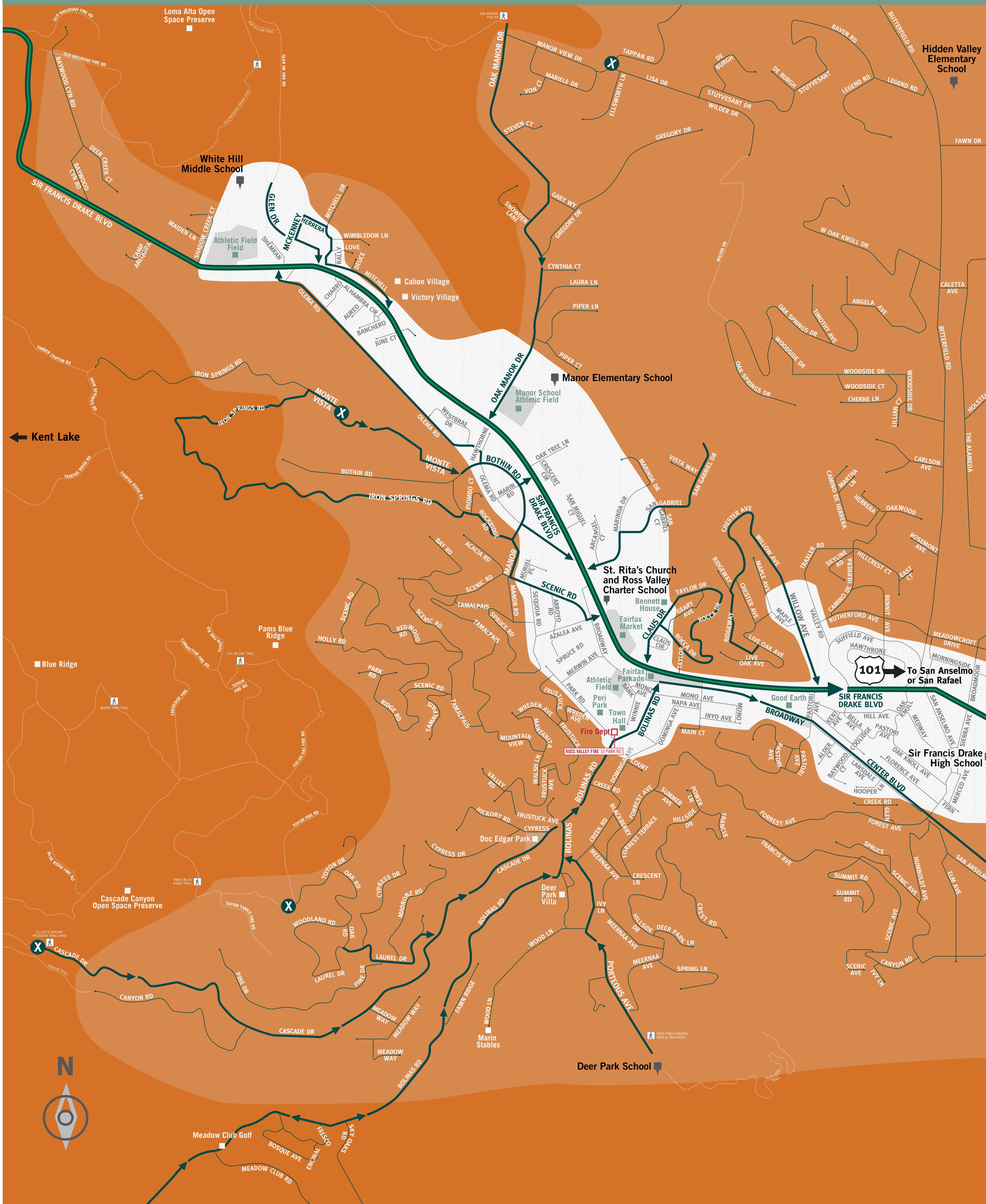
Go on foot or bicycle only if no other option exists. Sheltering indoors or in a car is usually safer than being exposed outside.

**Never evacuate uphill**, on fire roads, or into open spaces where there is unmaintained vegetation.

**Don't panic** in traffic! Inside a car on pavement is one of the safest places during a wildfire.

# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO  
DOWNLOAD THESE MAPS

## EMERGENCY NOTIFICATIONS

### EVACUATION ORDER

Moving community members out of a defined area due to an immediate threat to life and property from an emergency incident. An Evacuation Order should be used when there is potential or actual threat to civilian life within 1 to 2 hours or when the IC deems it necessary to protect civilians.

### EVACUATION WARNING

Alerting of community members in a defined area of a potential threat to life and property from an emergency incident. An Evacuation Warning may be issued when the potential or actual threat to civilian life is more than 2 hours away.

## Town of Fairfax

- Severe Fire Risk
- Fire Dept
- High Fire Risk
- Evacuation Routes
- Schools
- Safe Route  
EVEN IN TRAFFIC
- X Gate / No Access

**ROSS VALLEY FIRE DEPT**  
[www.rossvalleyfire.org](http://www.rossvalleyfire.org)

**TOWN OF FAIRFAX**  
[www.townoffairfax.org](http://www.townoffairfax.org)

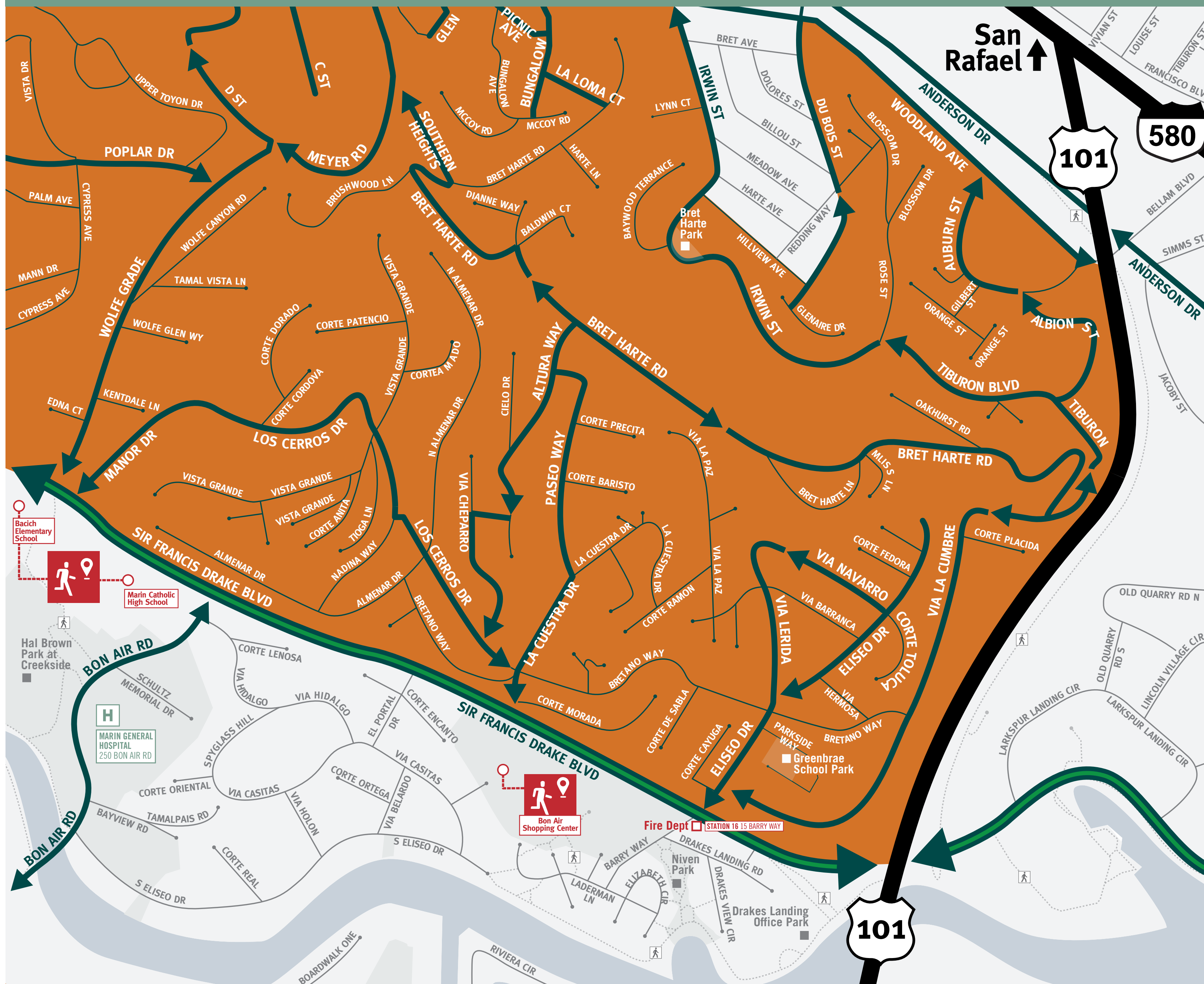
**FIRE Safe**  
**MARIN**  
[www.firesafemarin.org](http://www.firesafemarin.org)



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT

# Know your way out.

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO  
DOWNLOAD THESE MAPS

In Marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.

## EMERGENCY TERMINOLOGY

### EVACUATION ORDER

**Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

### EVACUATION WARNING

Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

### SHELTER IN PLACE

**Stay** in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.

## Greenbrae

- Severe Fire Risk
- Fire Dept
- Temporary Refuge Area
- Schools
- Evacuation Routes
- Safe Route  
EVEN IN TRAFFIC

KENTFIELD FIRE PROTECTION DISTRICT  
[www.kentfieldfire.org](http://www.kentfieldfire.org)

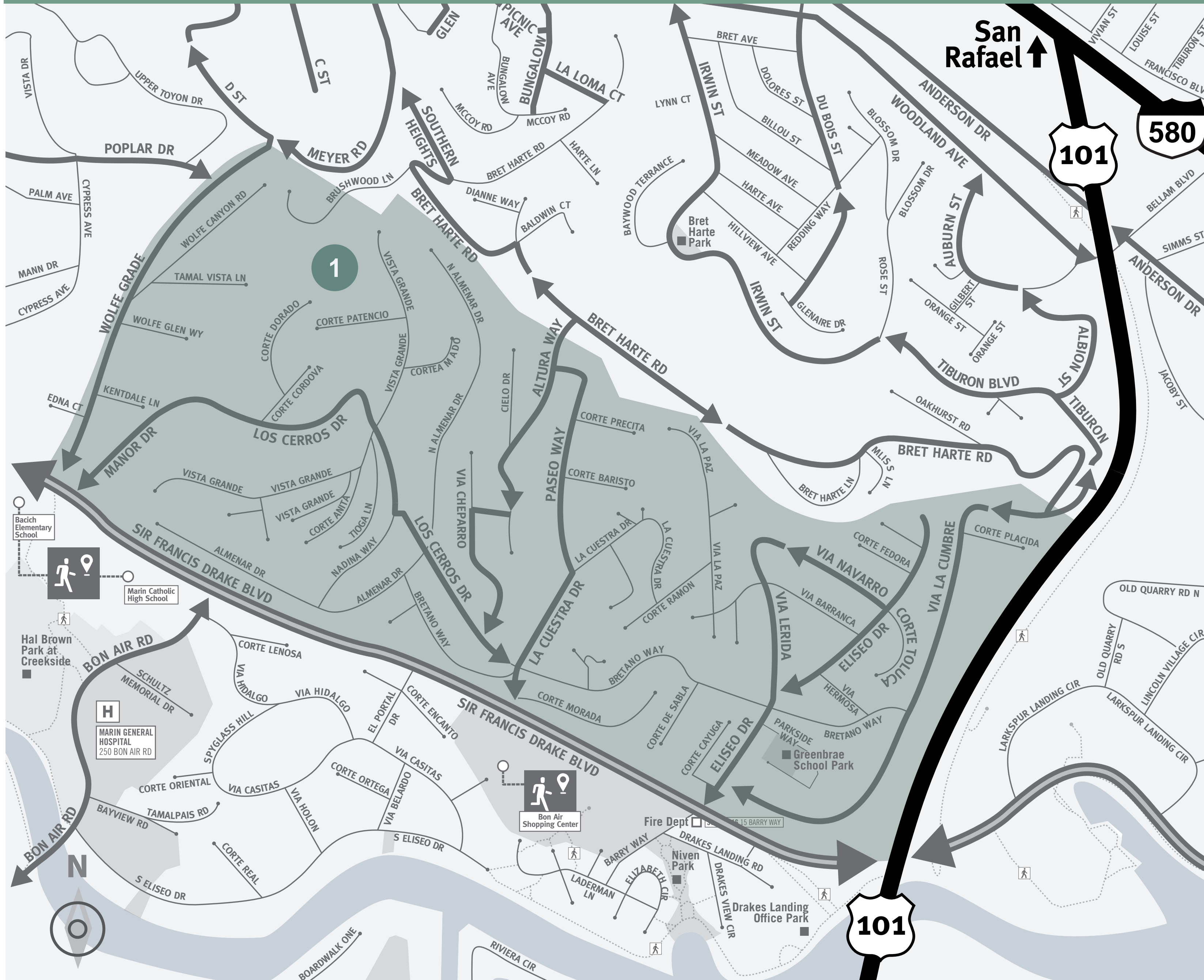
CENTRAL MARIN FIRE DEPT  
[www.centralmarinfire.org](http://www.centralmarinfire.org)



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT

# Your neighborhood zones

Note where you and your family members live, work and go to school. Then mark down these locations on this map.



ZONE AREA

1

## Greenbrae



Download the individual zone map for alert and warning information and further sources.

### EVACUATION TIPS

#### What to wear?

Wear goggles, leather gloves, and heavy shoes/boots; protect skin with long cotton clothing; protect airway and face with an N95 mask and bandanna. Wear a hat to protect hair from embers.

#### Where to go?

Avoid hillsides. Head for a valley floor by car, away from the fire if possible.

#### Just incase...

Go on foot or bicycle only if no other option exists. Sheltering indoors or in a car is usually safer than being exposed outside.

**Never evacuate** uphill, on fire roads, or into open spaces where there is unmaintained vegetation.

**Don't panic** in traffic! Inside a car on pavement is one of the safest places during a wildfire.

KENTFIELD FIRE PROTECTION DISTRICT  
www.kentfieldfire.org

CENTRAL MARIN FIRE DEPT  
www.centralmarinfire.org



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT

# Know your way out. YOUR CITYWIDE EVACUATION ROUTES.

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO DOWNLOAD THESE MAPS

In Marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.

## EMERGENCY TERMINOLOGY

### EVACUATION ORDER

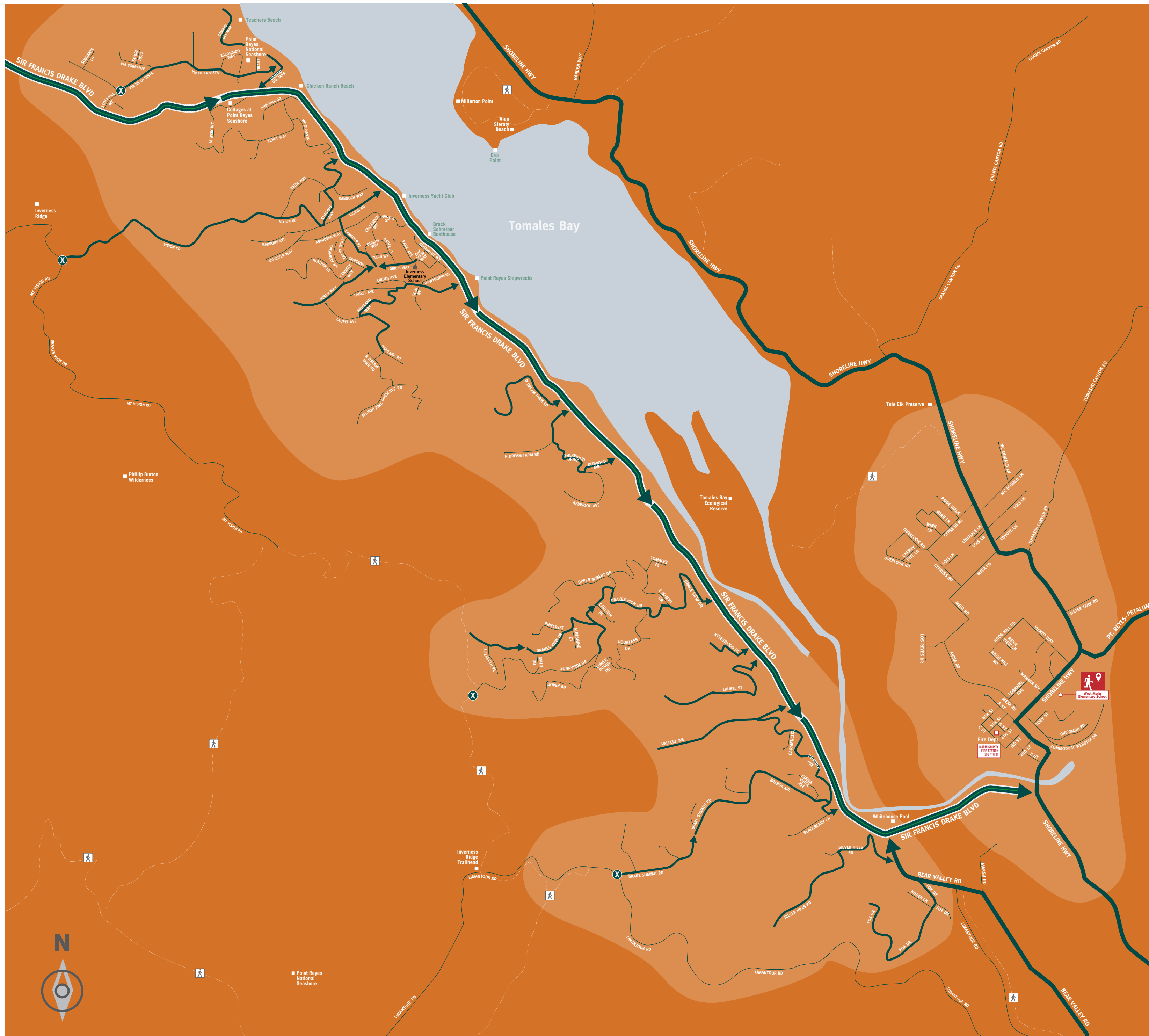
**Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

### EVACUATION WARNING

Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

### SHELTER IN PLACE

**Stay** in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.



# Inverness

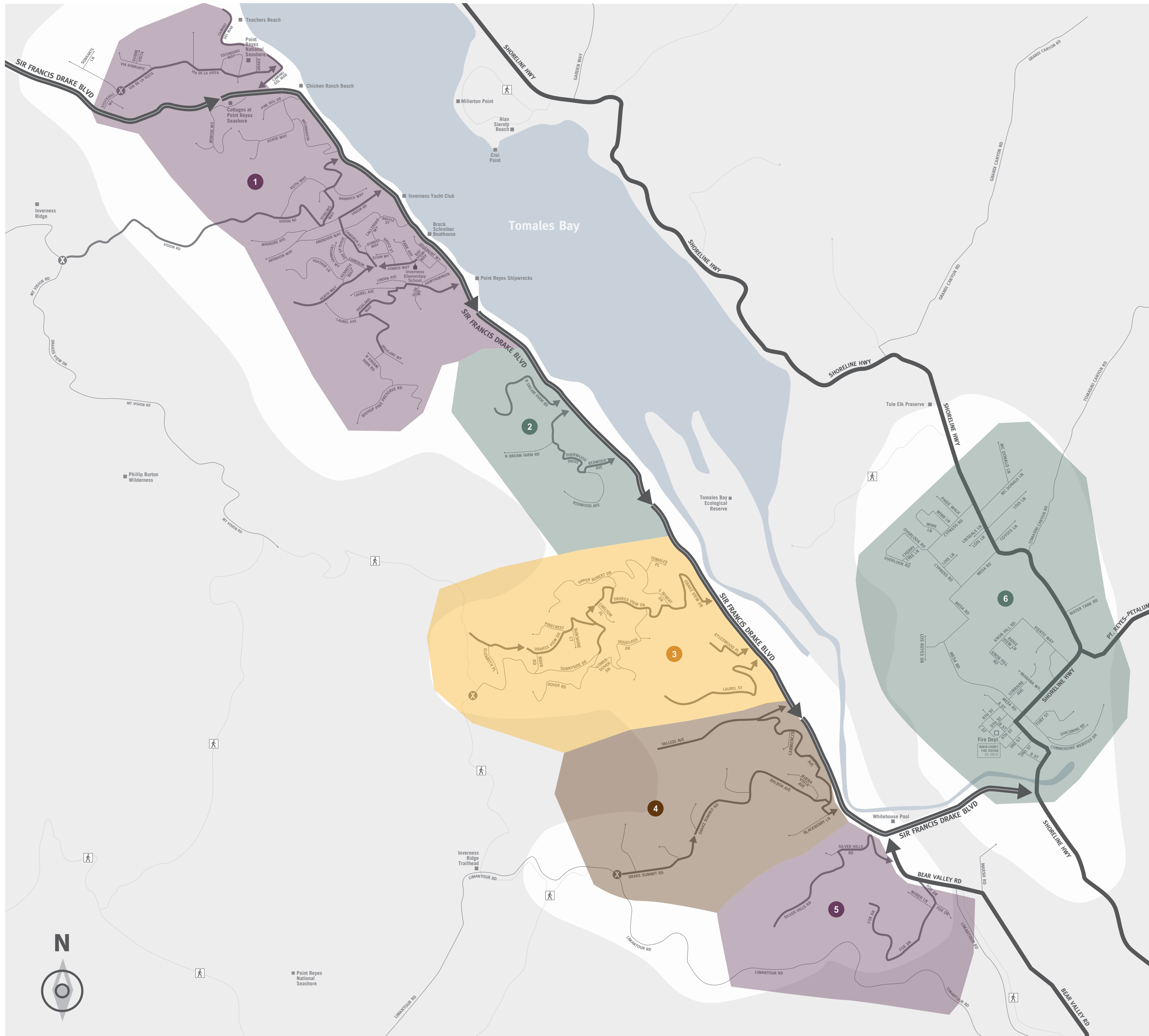
- WUI Elevated Risk
- Fire Dept
- Temporary Refuge Area
- Schools
- Evacuation Routes
- LAST RESORT IF YOU CAN'T EVACUATE
- Safety Buffer on Sir Francis Drake Blvd
- Gate / No Access

MARIN COUNTY FIRE DEPT  
www.marincountyfire.org



# Your neighborhood zones.

Note where you and your family members live, work and go to school. Then mark down these locations on this map.



## Inverness

Download the individual zone map for alert and warning information and further sources.



ZONE AREA  
**1** Inverness



ZONE AREA  
**2** Dreamfarm



ZONE AREA  
**3** Drakes View



ZONE AREA  
**4** Inverness Park



ZONE AREA  
**5** Silverhills



ZONE AREA  
**6** Point Reyes

MARIN COUNTY FIRE DEPT  
[www.marincountyfire.org](http://www.marincountyfire.org)



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT

# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO  
DOWNLOAD THESE MAPS

In Marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.

## EMERGENCY TERMINOLOGY

### EVACUATION ORDER

**Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

### EVACUATION WARNING

Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

### SHELTER IN PLACE

**Stay** in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.

## Nicasio

-  WUI Area  
ELEVATED RISK
-  Evacuation Routes
-  Fire Dept
-  Gate / No Access

MARIN COUNTY FIRE DEPT  
[www.marincounty.org](http://www.marincounty.org)

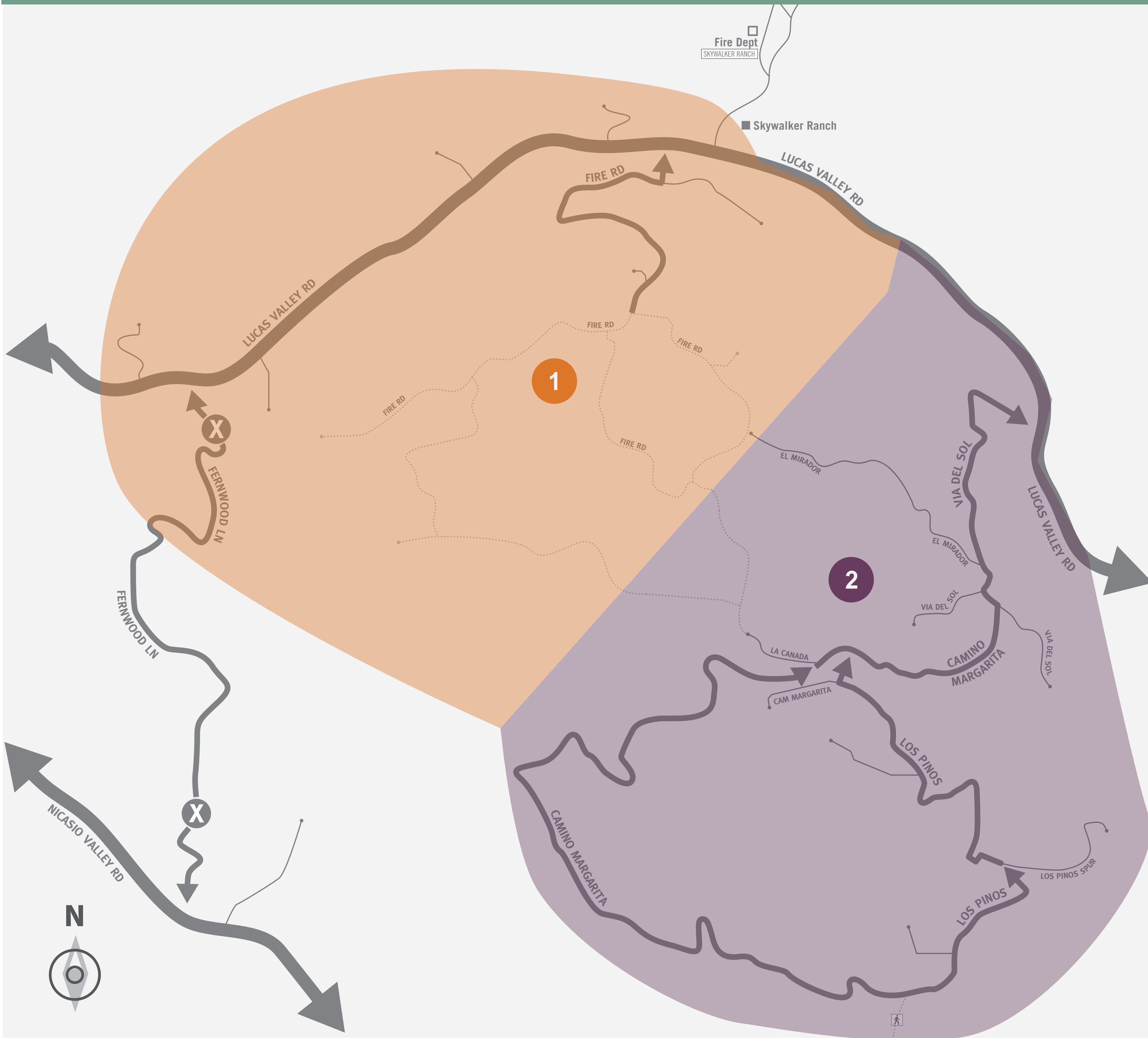


DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT



# Your neighborhood zone

Note where you and your family members live, work and go to school. Then mark down these locations on this map.



## Nicasio

Download the individual zone map for alert and warning information and further sources.



ZONE AREA

1

**Rancho Santa Margarita WEST**



ZONE AREA

2

**Rancho Santa Margarita EAST**

### EVACUATION TIPS

#### What to wear?

Wear goggles, leather gloves, and heavy shoes/boots; protect skin with long cotton clothing; protect airway and face with an N95 mask and bandanna. Wear a hat to protect hair from embers.

#### Where to go?

Avoid hillsides. Head for a valley floor by car, away from the fire if possible.

#### Just incase...

Go on foot or bicycle only if no other option exists. Sheltering indoors or in a car is usually safer than being exposed outside.

**Never evacuate** uphill, on fire roads, or into open spaces where there is unmaintained vegetation.

**Don't panic** in traffic! Inside a car on pavement is one of the safest places during a wildfire.

MARIN COUNTY FIRE DEPT

[www.marincounty.org](http://www.marincounty.org)



[www.firesafemarin.org](http://www.firesafemarin.org)



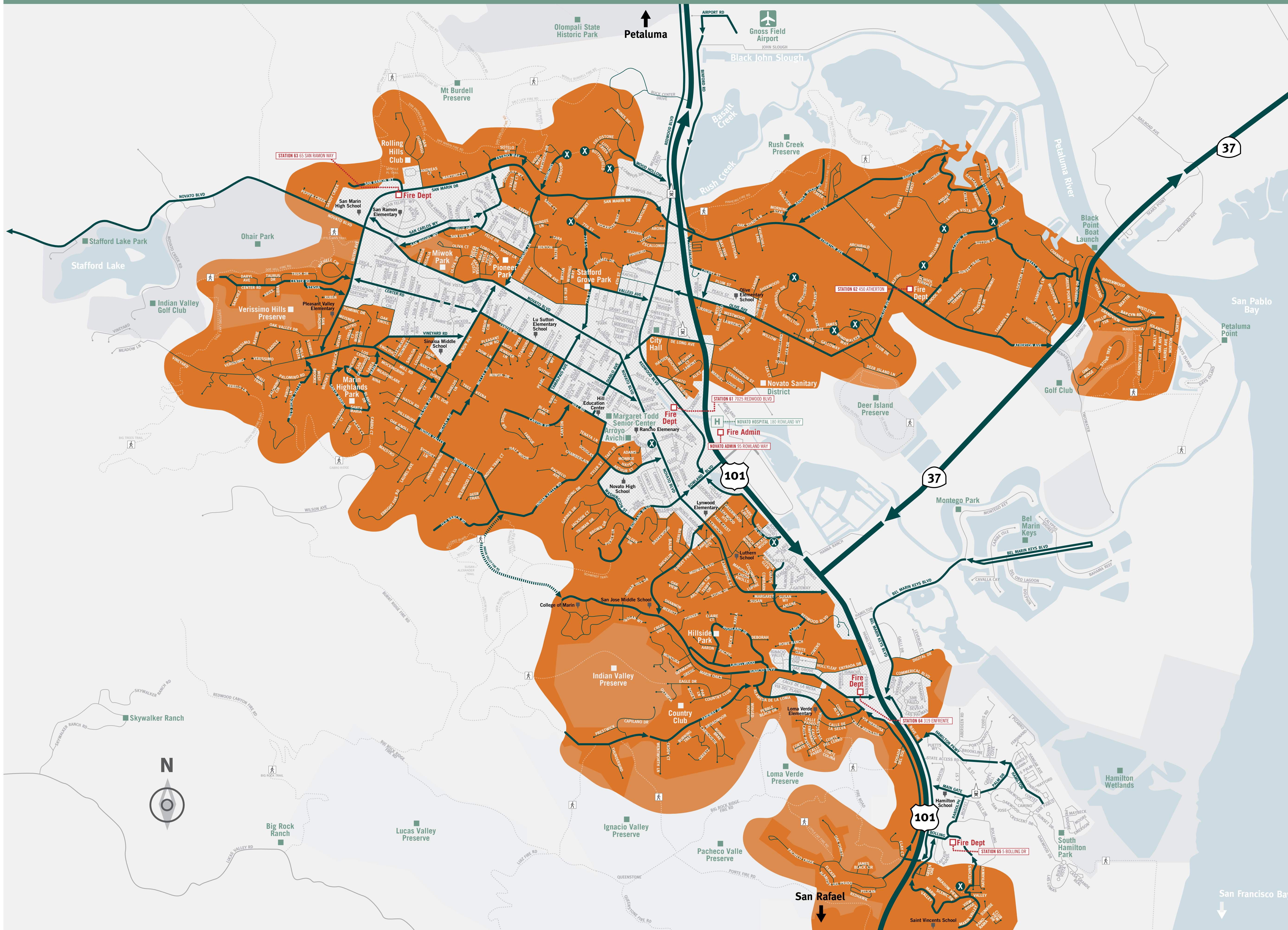
[www.marincounty.org](http://www.marincounty.org)



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DESIGN NETWORK FOR EMERGENCY MANAGEMENT

# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



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## EMERGENCY NOTIFICATIONS

### EVACUATION ORDER

Moving community members out of a defined area due to an immediate threat to life and property from an emergency incident. An Evacuation Order should be used when there is potential or actual threat to civilian life within 1 to 2 hours or when the IC deems it necessary to protect civilians.

### EVACUATION WARNING

Alerting of community members in a defined area of a potential threat to life and property from an emergency incident. An Evacuation Warning may be issued when the potential or actual threat to civilian life is more than 2 hours away.

## Novato

- Severe Fire Risk
- High Fire Risk
- Fire Dept
- Evacuation Routes
- Schools
- Trails
- Gate / No Access

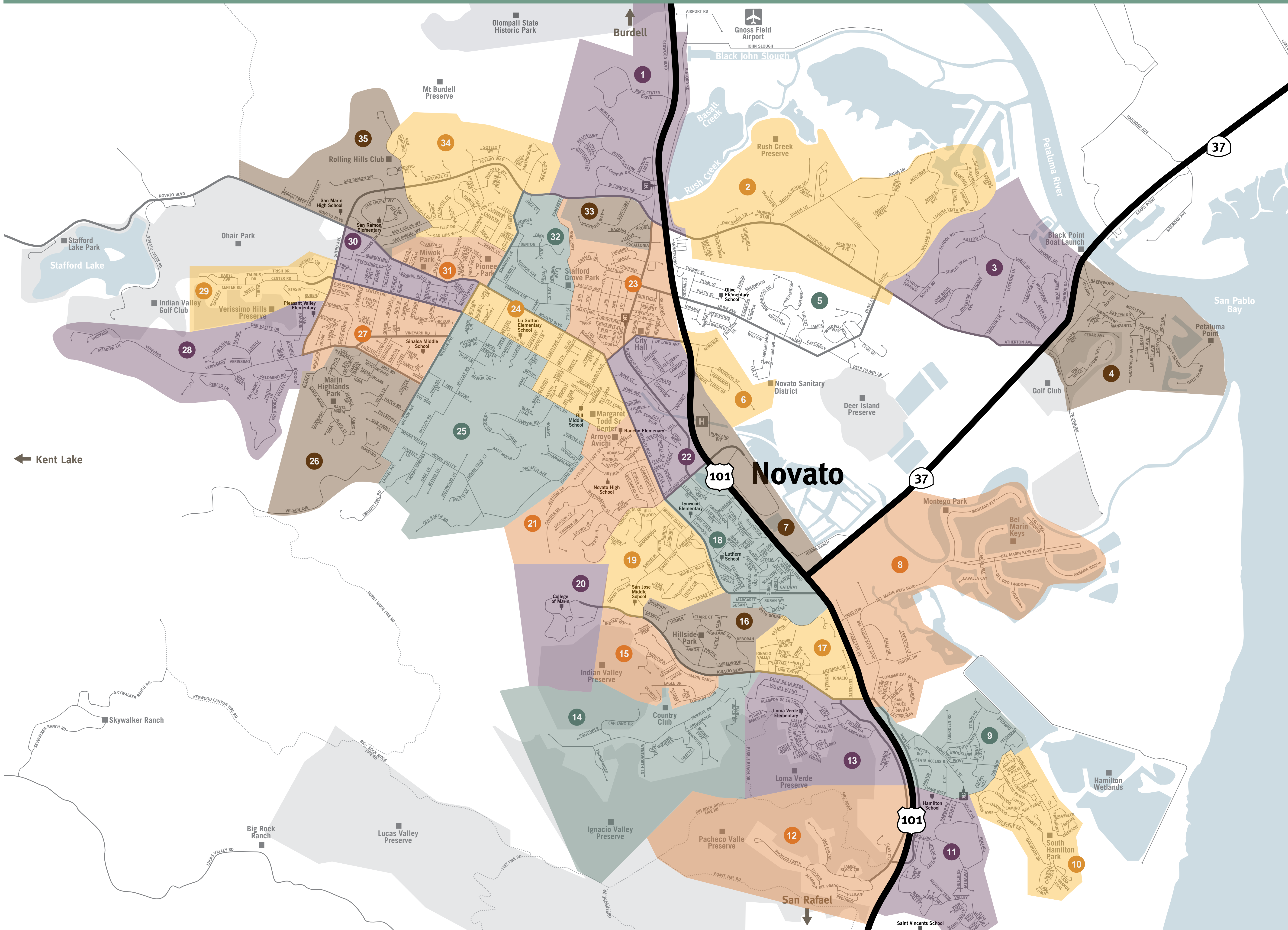
**NOVATO FIRE DISTRICT**  
[www.novatofire.org](http://www.novatofire.org)



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
 DESIGN NETWORK FOR EMERGENCY MANAGEMENT

# Your neighborhood zones

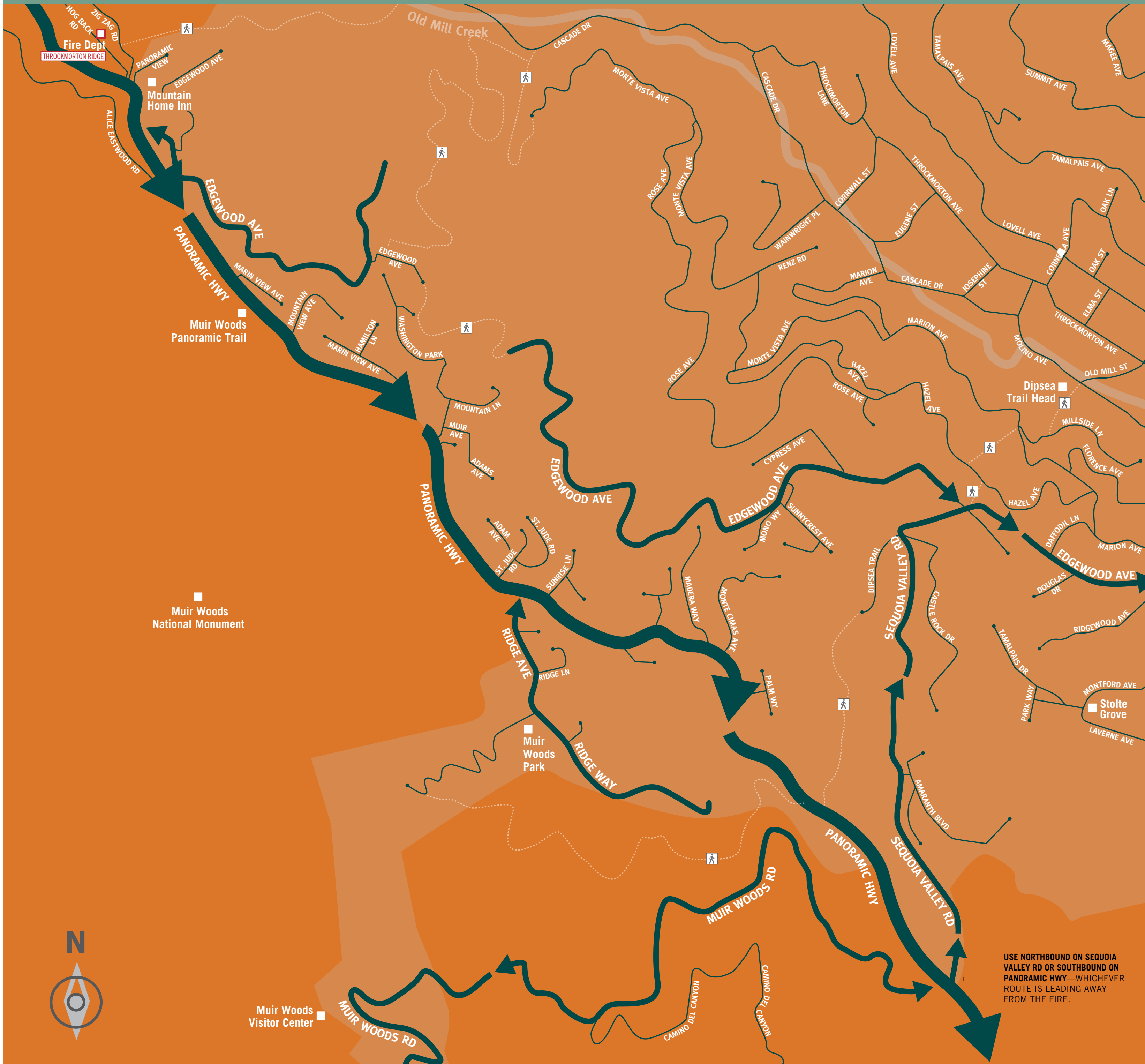
Note where you and your family members live, work and go to school. Then mark down these locations on this map. Zones will be used by city officials to expedite evacuations.



- 1 Wood Hollow
- 2 Bahia
- 3 Green Point
- 4 Black Point
- 5 Olive
- 6 Davidson
- 7 Vintage
- 8 Bel Marin Keys
- 9 North Hamilton
- 10 South Hamilton
- 11 Marin Valley
- 12 Pacheco Valle
- 13 Alameda de la Loma
- 14 Fairway
- 15 Marin Oaks
- 16 Highland
- 17 Palmer
- 18 South Novato Blvd
- 19 Sunset
- 20 Indian Valley College
- 21 Presidents
- 22 Rowland
- 23 Grant
- 24 Center
- 25 Indian Valley
- 26 Santa Maria
- 27 Vineyard
- 28 Wildhorse Valley
- 29 Trish
- 30 Eucalyptus
- 31 Oliva
- 32 Simmons
- 33 Santolina
- 34 San Andreas
- 35 San Marin

# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO DOWNLOAD THESE MAPS

In Marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.

## EMERGENCY TERMINOLOGY

### EVACUATION ORDER

**Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

### EVACUATION WARNING

Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

### SHELTER IN PLACE

**Stay** in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.

## Panoramic

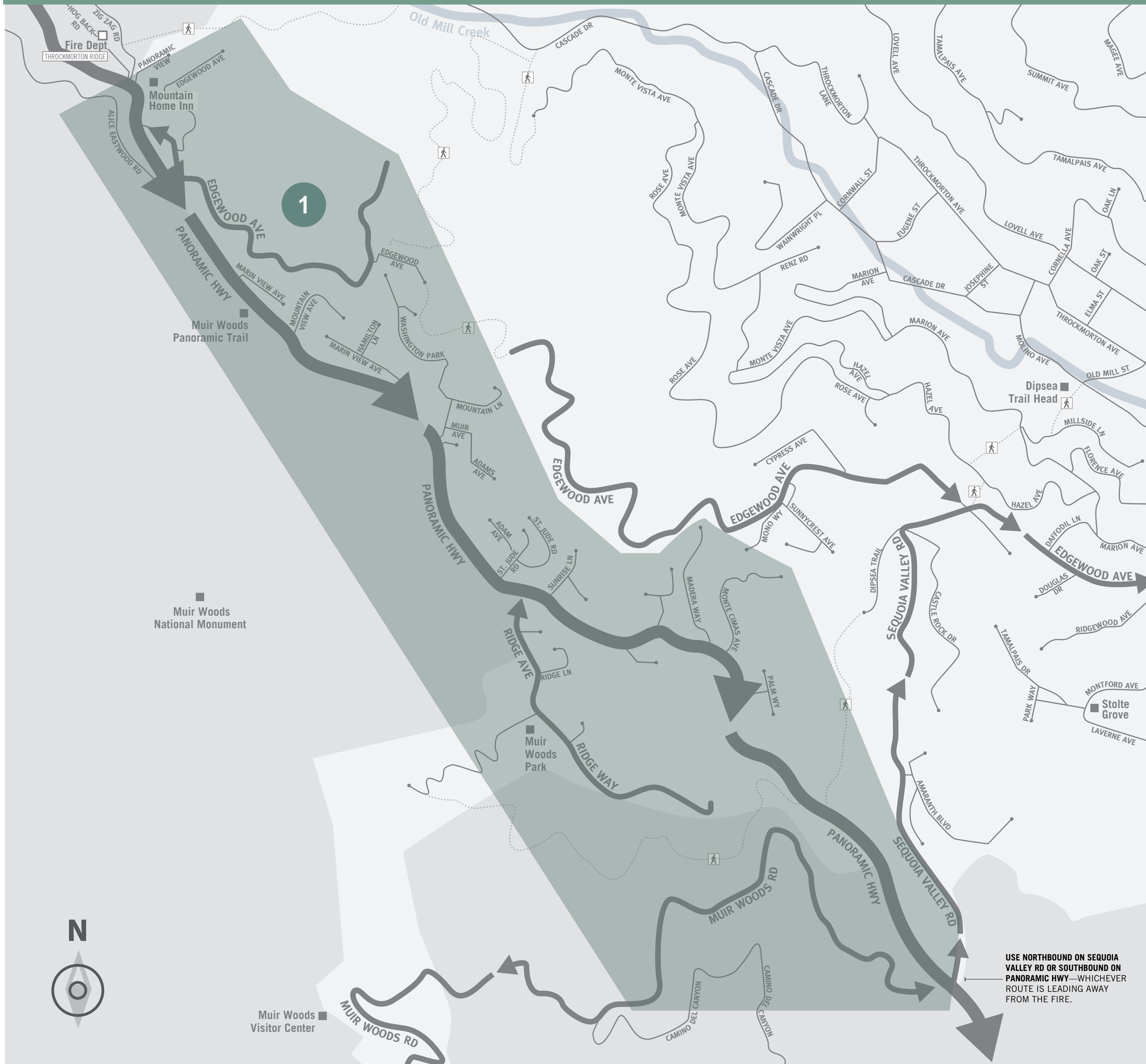
- WUI Area ELEVATED RISK
- Evacuation Routes
- Fire Dept



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN DESIGN NETWORK FOR EMERGENCY MANAGEMENT

# Your neighborhood zone

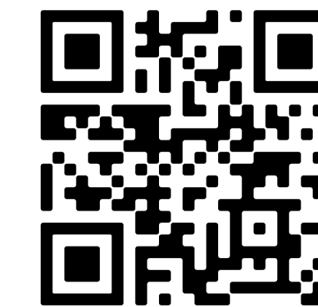
Note where you and your family members live, work and go to school. Then mark down these locations on this map.



ZONE AREA

1

## Panoramic



Download the individual zone map for alert and warning information and further sources.

### EVACUATION TIPS

#### What to wear?

Wear goggles, leather gloves, and heavy shoes/boots; protect skin with long cotton clothing; protect airway and face with an N95 mask and bandanna. Wear a hat to protect hair from embers.

#### Where to go?

Avoid hillsides. Head for a valley floor by car, away from the fire if possible.

#### Just incase...

Go on foot or bicycle only if no other option exists. Sheltering indoors or in a car is usually safer than being exposed outside.

**Never evacuate** uphill, on fire roads, or into open spaces where there is unmaintained vegetation.

**Don't panic** in traffic! Inside a car on pavement is one of the safest places during a wildfire.



[www.firesafemarin.org](http://www.firesafemarin.org)



[www.marincounty.org](http://www.marincounty.org)



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT

# Know your way out.

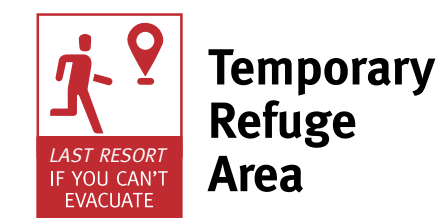
## YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



SCAN THIS QR CODE TO  
DOWNLOAD THESE MAPS

# Ross Valley



Temporary  
Refuge  
Area



Schools



Evacuation Routes



Gate / No Access



Safe Route EVEN IN TRAFFIC



WUI ELEVATED RISK



Fire Dept

In marin, authorities will use the terms **evacuation order**, **evacuation warning**, and **shelter-in-place** to alert you to the significance of the danger and provide basic instructions.

## EMERGENCY TERMINOLOGY

### EVACUATION ORDER

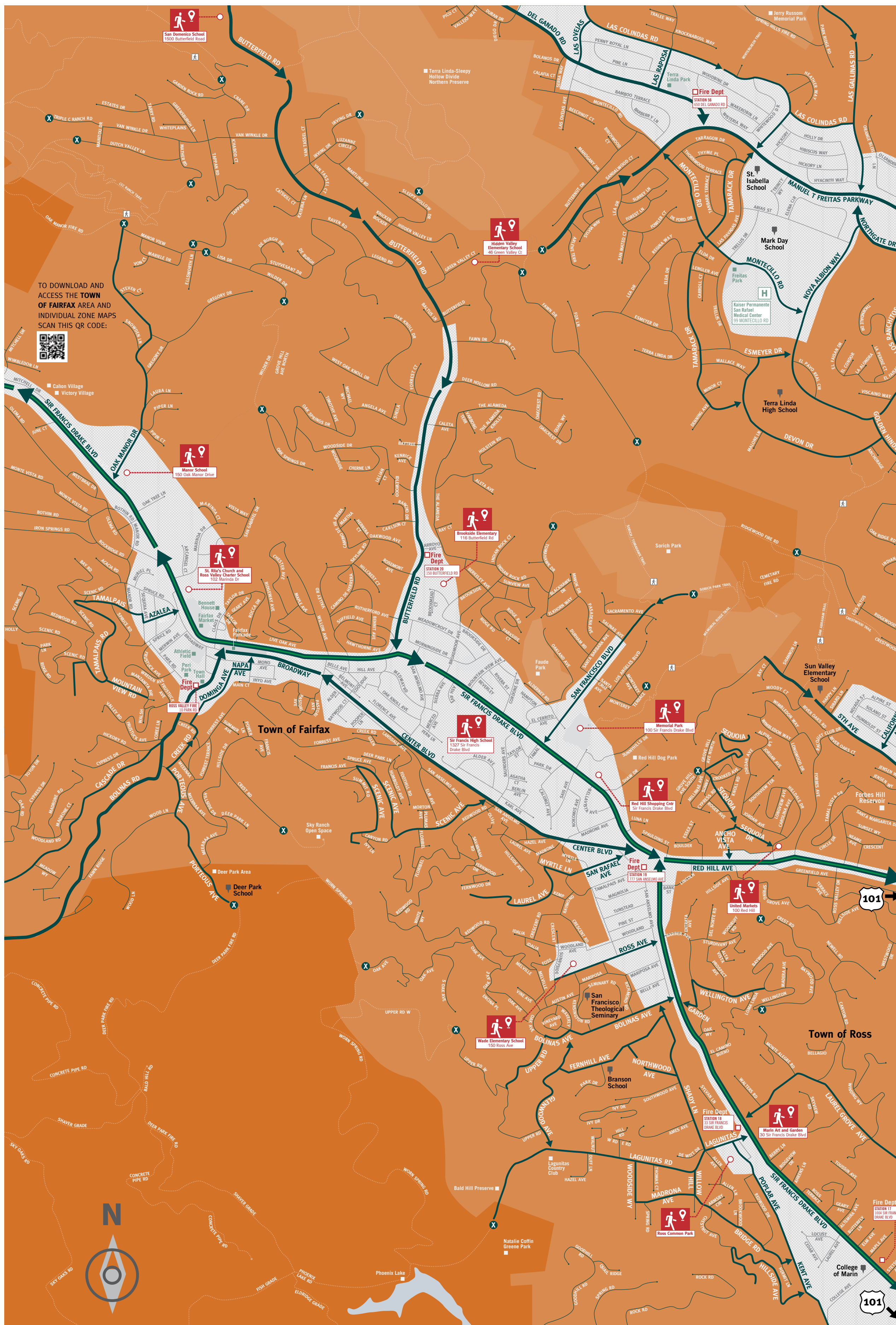
**Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

### EVACUATION WARNING

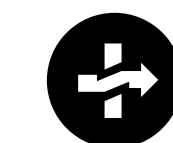
Prepare to evacuate as soon as possible. A short delay to gather valuables and prepare your home may be ok (see **Evacuation Checklist** on individual zone maps) may be ok. Leave if you feel unsafe or conditions change.

### SHELTER IN PLACE

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ROSS VALLEY FIRE DEPARTMENT  
www.rossvalleyfire.org



DESIGN AND FIRECLEAR MAP PROVIDED BY CLAUDINE JAENICHEN  
DESIGN NETWORK FOR EMERGENCY MANAGEMENT

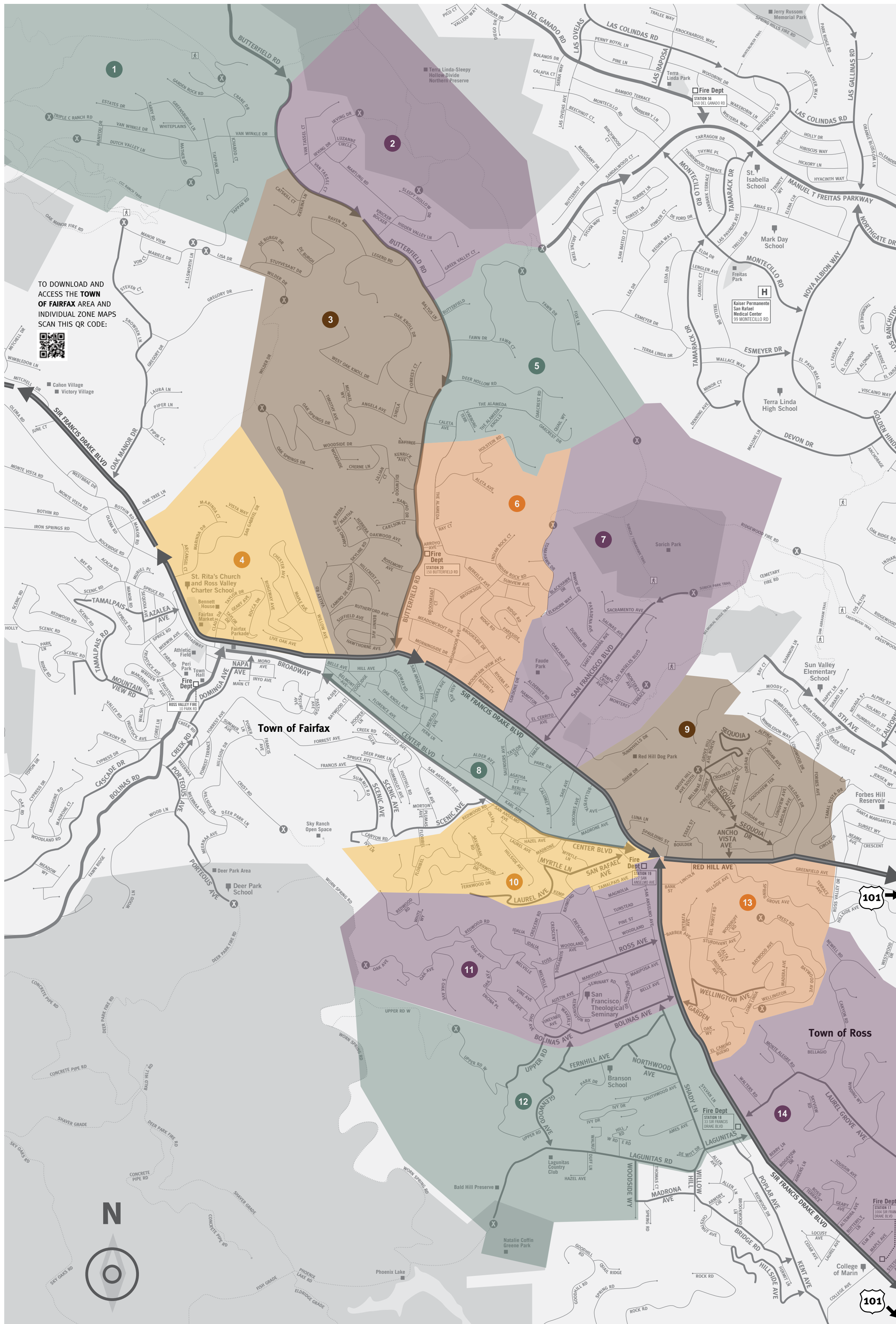
# Your neighborhood zones.

## YOUR CITYWIDE EVACUATION ROUTES

Note where you and your family members live, work and go to school. Then mark down these locations on this map.

### Ross Valley

Download the individual zone map for alert and warning information and further sources.



ZONE AREA  

**1 Van Winkle**

ZONE AREA  

**6 Alameda**

ZONE AREA  


**11 Oak**

ZONE AREA  

**2 Irving**


ZONE AREA  

**7 San Francisco Blvd**

ZONE AREA  

**12 Shady**

ZONE AREA  

**3 Legend/Herrera**

ZONE AREA  

**8 Drake**

ZONE AREA  

**13 Wellington**

ZONE AREA  

**4 Ridgeway**

ZONE AREA  

**9 Sequoia**

ZONE AREA  

**14 Kentfield**

ZONE AREA  

**5 Fawn**

ZONE AREA  

**10 Redwood**

### EVACUATION TIPS

**What to wear?**  
 Wear goggles, leather gloves, and heavy shoes/boots; protect skin with long cotton clothing; protect airway and face with an N95 mask and bandanna. Wear a hat to protect hair from embers.

**Where to go?**  
 Avoid hillsides. Head for a valley floor by car, away from the fire if possible.

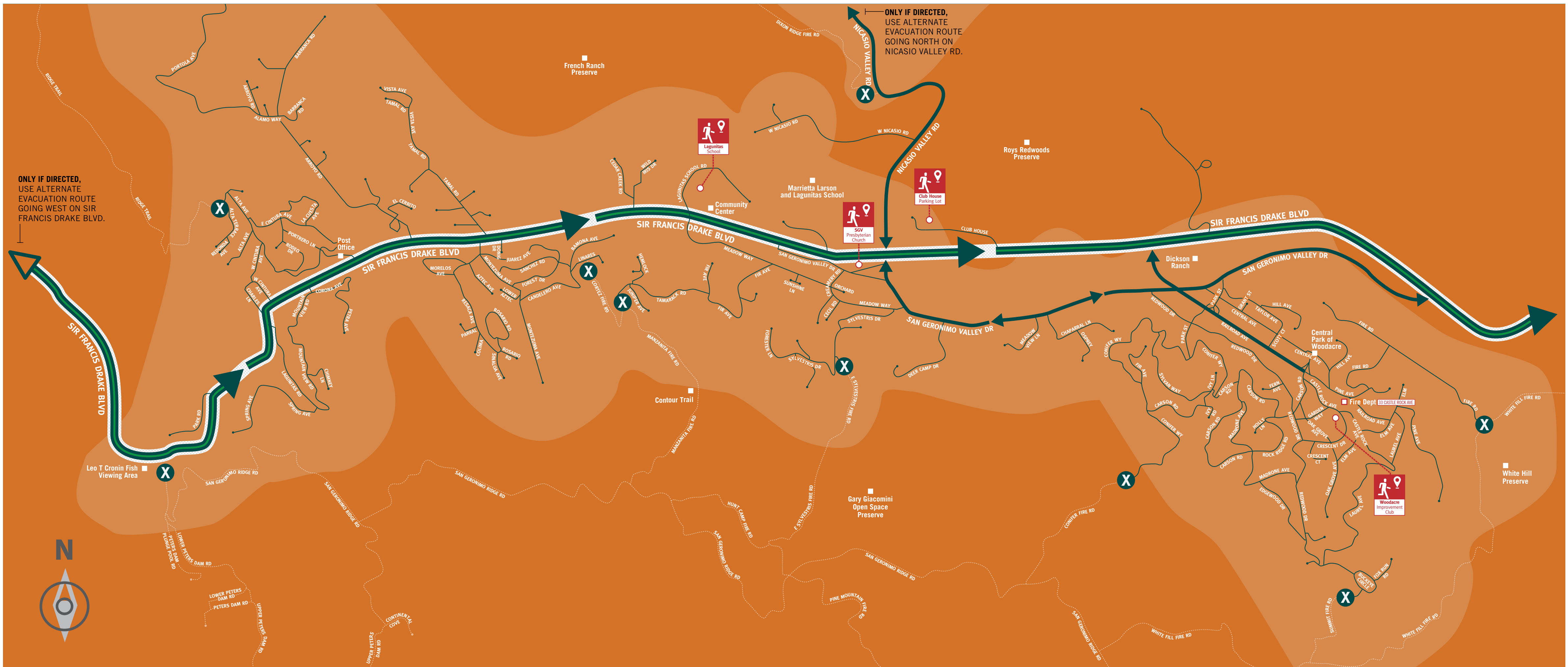
**Just incase...**  
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# Know your way out. YOUR CITYWIDE EVACUATION ROUTES

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



## San Geronimo

- WUI Area ELEVATED RISK
- Fire Dept
- Temporary Refuge Area
- Schools
- Evacuation Routes
- Safe Route EVEN IN TRAFFIC
- Safety Buffer on Sir Francis Drake Blvd
- Gate / No Access

MARIN COUNTY FIRE DEPT  
www.marincounty.org



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### EMERGENCY TERMINOLOGY

**EVACUATION ORDER: Leave now!** Evacuate immediately with family and pets. Dress appropriately and take only your Go Kit(s). Do not delay to gather belongings or prepare your home. Follow any directions provided in the evacuation order.

**EVACUATION WARNING:** Prepare to evacuate as soon as possible. A short delay to gather

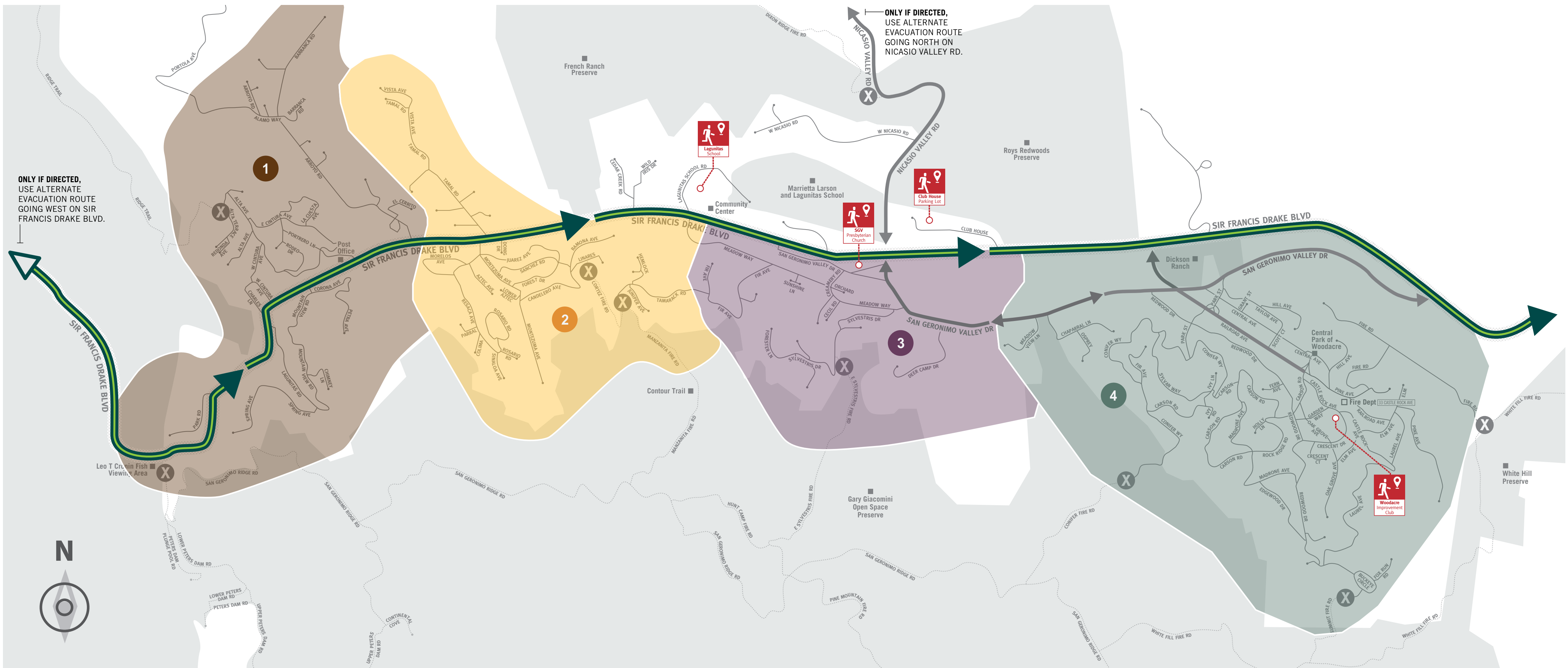
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**SHELTER IN PLACE:** Stay in your current location or the safest nearby building or temporary refuge area. May be required when evacuation isn't necessary or is too dangerous.



# Your neighborhood zones

Familiarize yourself with major routes and at least two ways out of your neighborhood in case of an evacuation.



## San Geronimo

Download the individual zone map for alert and warning information and further sources.

ZONE AREA  
**1 Lagunitas**

ZONE AREA  
**3 San Geronimo**

ZONE AREA  
**2 Forest Knolls**

ZONE AREA  
**4 Woodacre**

### EVACUATION TIPS

#### What to wear?

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