
Draft Initial Study / Proposed Mitigated Negative Declaration

21 CALLE DEL ONDA WASTEWATER SYSTEM VARIANCE REQUEST

MARIN COUNTY, CALIFORNIA

Prepared for:

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1.0 INTRODUCTION AND PURPOSE

This Initial Study/Proposed Mitigated Negative Declaration of environmental impacts is being prepared to conform to the requirements of the California Environmental Quality Act (CEQA) Statute and Guidelines (California Code of Regulations 15000 et. seq.). This Initial Study/Proposed Mitigated Negative Declaration evaluates the potential environmental impacts that might reasonably be anticipated to result from implementation of the 21 Calle del Onda Wastewater System Variance Request Project (project). The Stinson Beach County Water District (District) is the Lead Agency as defined under CEQA Guidelines Section 15050.

Per CEQA Guidelines 15300.2(c), a categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances. The project is excluded from the use of a categorical exemption due to the nature of project activities and their proximity to a water feature, which could potentially cause the project to impact biological and cultural resources.

The purpose of an Initial Study is to provide the Lead Agency with information to use as the basis for deciding whether to prepare an Environmental Impact Report (EIR) or a Negative Declaration for the project. A Negative Declaration briefly describes the reason that a project would result in a significant effect on the environment, and the basis of the decision not to prepare an EIR. This Initial Study illustrates that all resource impacts are reduced to a less-than-significant level with mitigation incorporated, qualifying the project for a Proposed Mitigated Negative Declaration.

This Initial Study/Proposed Mitigated Negative Declaration provides the District and the public with an understanding of the potential environmental impacts associated with the project. The purpose of the project is to gain approval on wastewater treatment system plans for the vacant lot at 21 Calle del Onda. The plans will require two setback variances to Stinson Beach County Water District Title IV Onsite Wastewater Management Code, Chapter 15 Design Standards, Section 100 Site Criteria – Setbacks.

2.0 PROJECT INFORMATION

2.1 Project Title

21 Calle del Onda Wastewater System Variance Request Project

2.2 Lead Agency Name and Address

Stinson Beach County Water District
3785 Shoreline Highway
Stinson Beach, California 94970

2.3 Contact Person and Phone Number

Ed Schmidt
General Manager
(415) 868-1333
ed@stinson-beach-cwd-dst-ca.us

2.4 Project Location

The proposed project site is located on a vacant lot at 21 Calle del Onda in the unincorporated community of Stinson Beach in western Marin County. The Assessor's Parcel Number (APN) for the project site is 195-162-49. The project site is accessed via Calle del Onda, a local-serving road located off of Highway 1. Figure 1 depicts the project site's locations.

2.5 General Plan Designation and Zoning District

Marin County General Plan Designation

Multi-Family, 1-4 units/acre, Coastal Zone (C-MF2)

Marin County Zoning District

Residential, Two-family, Coastal Zone (C-R2)

2.6 Surrounding Land Uses and Setting

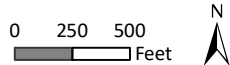
The project site is located on a vacant lot, approximately 80 foot by 190 foot (15,200 sq ft), at 21 Calle del Onda in western unincorporated Marin County, CA. The project site and its surroundings are in Marin County's coastal zone. Areas adjacent to the project site are designated by the Marin Countywide Plan for coastal low-density residential and coastal open space uses. The project site is bordered by Upton Beach and the Pacific Ocean on its southwestern side and Calle del Onda on its northwestern side. The project site is bordered on all other sides by low-density residential development. Easkoot Creek sits less than 350 feet north. The Pacific Ocean is approximately 100 feet to the west, with Upton Beach sitting adjacent to the project site along its southwestern side and Stinson Beach sitting approximately 600 feet to the southeast. Both beaches are public recreation areas, with the former administered by Marin County and the latter by the National Park Service. Figure 2 depicts views of the project site. Figure 3 depicts the views of adjacent land uses.



Sources: National Geographic, WRA | Prepared By: njander, 7/31/2019

Figure 1. Project Site Regional Location Map

21 Calle del Onda Wastewater System Variance Request Project
Marin County, California





View 1. View of the project site looking east from Calle del Onda.



View 2. View of the project site looking southeast from Upton Beach.



View 3. View of the project site from its southern side, looking north.



View 4. View of the project site from its eastern boundary, looking north.

Figure 2. Views of the Project Site

21 Calle del Onda Wastewater Variance Request Project
Stinson Beach, Marin County, CA



View 1. View of Upton Beach, looking west from the project site.



View 2. View of adjacent residences, looking east from the project site.



View 3. View of adjacent residences, looking north from the project site.



View 4. View of adjacent residences and Calle del Onda, looking northeast from the project site.

Figure 3. Views of Adjacent Land Uses

21 Calle del Onda Wastewater Variance Request Project
Stinson Beach, Marin County, CA

3.0 PROJECT DESCRIPTION

3.1 Project Description

Project Overview and Objectives

The 21 Calle del Onda Wastewater System Variance Request Project (project) is proposed to replace the existing wastewater system underlying the vacant lot at 21 Calle del Onda. The existing system was installed in 1985 and has not been used since a fire burned down the single-family residence served by the system in the mid-1980s. The Applicant proposes to replace the decades-old system with a 2,000-gallon septic tank, 2,000-gallon dual compartment sump tank, and sub-grade concrete retaining wall. The proposed septic tank will be installed following issuance of a building permit by the County of Marin. A single-family residence with no more than 1,400 square feet (sq ft) of habitable space may eventually be constructed on the site, but is not proposed at this time. The details of such development would be determined at a later date.

Project Background

The project site is an approximately 15,200-sq ft property in a low-density residential community. The site is vacant apart from a chimney and gravity septic system in the northeastern portion of the property, which are remnants of a two-bedroom single-family home that burned down in the mid-1980s. The project site has remained vacant since that time.

The existing wastewater system consists of a 1,200-gallon fiberglass septic tank installed in 1985, a gravity-fed leach field, and a small seepage pit. Based on the size of the home and regulations in place in the mid-1980s, the in-place system was likely designed for a flow of 300 gallons per day. In 1989, the District issued a Failing Onsite Disposal System Citation Report, affirming that the in-place system cannot be used for future development.

A previous iteration of the project proposed a wastewater system for a residence of up to 2,800 sq ft and required three setback variances for construction near a watercourse. The proposed project has been decreased in scale to construct a wastewater system for a residence of up to 1,400 sq ft and would require two setback variances.

Proposed Project

Basics of a Sand Filter System

Sand filter septic systems are well-suited for sites close to water bodies. In a sand filter septic system, wastewater is separated from solids in the septic tank. It subsequently flows to a pump chamber, where it is then pumped into a sand filter. Wastewater is then pumped through the pipes at the top of the sand filter at low pressure, where it filters through the sand and is later discharged to a dispersal system.

Existing System

The existing gravity septic system underlying the site is no longer functional and is not capable of serving future development. Accordingly, the system would be either abandoned in-place or removed. If abandoned in place, the tank would be pumped and cleaned as needed and would subsequently be either crushed or filled with sand, soil, or concrete. The area over the abandoned tank would be graded to avoid ponding. If removed, the current system would be disposed of at an appropriate landfill.

Proposed System

The proposed system's location within the project site considered minimizing wave-erosion forces and flooding potential and building the system on suitable soil. Noble Consultants (Noble) completed a Coastal Engineering Analysis and AYS Engineering (AYS) and District staff performed on-site soil assessment and groundwater monitoring. Their findings are discussed throughout this Initial Study and were used to inform the project's design.

The proposed wastewater system is a standard intermittent sand filter system with a 2,000-gallon septic tank, 2,000-gallon dual compartment sump tank, and sub-grade concrete retaining wall. The proposed system was designed under an array of considerations, including stability during prolonged wave action, soil types within the project site, and separation of untreated wastewater and groundwater. The project was designed to treat and disperse an average daily flow of 200 gallons. Treatment and dispersal would be limited to a maximum of 300 gallons per day. Should residential development occur on the site at a later date, water conservation fixtures would be incorporated into the home's design accordingly, and would include such features as low-flow toilets and showerheads.

The proposed design includes raised bed dispersal fields, which would increase the separation between untreated effluent and seasonal high groundwater. Additionally, wastewater would be pretreated in an intermittent sand filter. The dispersal field would be constructed approximately 75 feet from Upton Beach, which was set by District staff and AYS Engineering during a king tide event. The septic and sump tank would be installed approximately 46 feet from the mean high water line behind the existing sand berm with a top elevation of approximately 17 feet NADV88. A 12-foot tall concrete retaining wall would be constructed below grade around all septic system components. The wall would be constructed to help the system withstand erosion from wave run-up during significant storm events.

A 115 volt, single-phase power source would be constructed to provide power to the system. This source would provide a minimum of 20 amps to the system's control panel. A pump would be installed with a hands-off auto switch and an audiovisual alarm and effluent sensing device to indicate high water conditions. The pump would be installed a minimum of eight inches from the bottom of the sump.

To avoid crossing water and sewer lines, any existing waterlines within ten feet of the septic system would be re-routed. Where re-routing is not feasible, water and sewer lines within ten feet of each other would be sleeved with polyvinyl chloride (PVC). Electrical conduits and wastewater pipes throughout the system would primarily be constructed on PVC and sealed with grout.

After the new system is in place, screens would be installed on all sewer roof vents to prevent mosquito infestation. The ground surface above the system would be paved with approximately one foot of concrete or covered with approximately one foot of gravel.

Construction

The contractor would notify the District at least 48 hours prior to the start of construction and inspection. Construction would occur during the dry season and would not be permitted under wet conditions. Construction is anticipated to occur Monday through Friday during daylight hours over a span of four to six weeks. Nighttime construction would not occur. Construction would occur Monday through Friday between the hours of 7 am and 6 pm, in accordance with the Marin County Municipal Code. During construction, the contractor would implement erosion control measures. These would include, at minimum, placing straw and seed in disturbed areas.

Installation of the new system and abandonment or removal of the old system would require excavation, grading, power line installation, potential waterline reroute, and potential paving. Tools to be used during construction therefore may include, but are not necessarily limited to, excavators and a small pickup truck.

Maintenance and Monitoring

The District would inspect the system three times throughout construction, examining different aspects of the system at each phase as specified by the construction plans. Inspections will examine such components as tank watertightness, control panel integrity, perforation size and spacing, etc.

Waterproof, airtight access risers would be constructed to leave one and three feet between existing grade and the tops of tanks to facilitate system access. A diversion valve box would be installed three inches above grade; and the valve would be alternated every six months. Four sand filter monitoring wells would be installed, two at the upper gravel/sand interface and two at the bottom of the liner. Additionally, the septic system would be inspected by the District at least once during the first year following construction. The frequency of subsequent inspection would be determined by District staff.

3.2 Project-Related Approvals, Agreements, and Permits

The information contained in this Initial Study will be used by the Stinson Beach County Water District (the CEQA Lead Agency) as it considers whether or not to approve the proposed project. If the project is approved, the Initial Study and associated Mitigated Negative Declaration (MND), would be used by the County and responsible and trustee agencies in conjunction with various approvals and permits. These actions include, but may not be limited to, the following approvals by the agencies indicated:

Stinson Beach County Water District

- Variance Requests for Section 4.15.100 Criteria – Setbacks
 - Reduce watercourses and Water Bodies setback to dispersal field from 100 to 75 feet
 - Reduce Watercourses and Water Bodies setback to Septic and Sump Tank from 50 to 46 feet

Marin County Community Development Agency – Local Coastal Program

- Coastal Development Permit

4.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is potentially significant unless mitigation is incorporated, as indicated by the checklist on the following pages.

5.1 Aesthetics	5.8 Greenhouse Gas Emissions	5.15 Public Services
5.2 Agricultural Resources	5.9 Hazards/Hazardous Materials	5.16 Recreation
X 5.3 Air Quality	X 5.10 Hydrology/Water Quality	5.17 Transportation
X 5.4 Biological Resources	5.11 Land Use/Planning	5.18 Tribal Cultural Resources
5.5 Cultural Resources	5.12 Mineral Resources	X 5.19 Utilities and Service Systems
5.6 Energy	X 5.13 Noise and Vibration	5.20 Wildfire
5.7 Geology and Soils	5.14 Population/Housing	X 5.21 Mandatory Findings of Significance

Determination

On the basis of this initial evaluation:

- I find that the project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.
- I find that although the project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- I find that the project MAY have a "Potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature:
Name and Title:

Date:

Initial Study Checklist

This section describes the existing environmental conditions in and near the project area and evaluates environmental impacts associated with the proposed project. The environmental checklist, as recommended in the CEQA Guidelines (Appendix G), was used to identify environmental impacts that could occur if the proposed project is implemented. The right-hand column in the checklist lists the source(s) for the answer to each question. The cited sources are identified at the end of this section.

Each of the environmental categories was fully evaluated, and one of the following four determinations was made for each checklist question:

- **“No Impact”** means that no impact to the resource would occur as a result of implementing the project.
- **“Less than Significant Impact”** means that implementation of the project would not result in a substantial and/or adverse change to the resource, and no mitigation measures are required.
- **“Less than Significant with Mitigation Incorporated”** means that the incorporation of one or more mitigation measures is necessary to reduce the impact from potentially significant to less than significant.
- **“Potentially Significant Impact”** means that there is either substantial evidence that a project-related effect may be significant, or, due to a lack of existing information, could have the potential to be significant.

4.1 AESTHETICS — Except as provided in Public Resources Code Section 21099, would the project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In non-urbanized 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 points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The project site is located in western unincorporated Marin County, CA in the community of Stinson Beach. Stinson Beach is a rural community characterized by low-density development alongside coastal resources such as ocean, beach, lagoon, and coastal vegetation. According to the Marin Countywide Plan, the project site is part of Marin County’s Coastal Corridor, a portion of the county primarily intended for parks, recreational use, agricultural, and preservation of small coastal communities.

The Marin Countywide Plan designates the project site for multi-family coastal development with 1-4 units per acre (C-MF2). Acceptable density under the MF-2 designation ranges from 1-4 dwelling units / square acre and acceptable floor-area-ratio ranges from 0.01 to 0.3.¹ Per the County ordinance, the project site is zoned for residential, two-family coastal development (C-R2).²

¹ Marin County Community Development Agency, “Marin Countywide Plan” (Marin County, CA, November 6, 2007).

² Marin County, “Zoning Districts and Allowable Uses,” Title 22, Development Code Marin County Code (n.d.).

Per Policy DES-4.1 of the Countywide Plan, important scenic resources in Marin County include ridgelines, upland greenbelts, hillsides, water, and trees. Public views of the project site feature water but do not feature trees, ridgelines, upland greenbelts, or hillsides. Public views of the project site looking west from Calle del Onda feature water in the form of the Pacific Ocean, with a sandy, expansive beach sitting in the foreground. The Pacific Ocean and the beach feature prominently in the background of views of the project site from various vantage points.

There are no officially designated State scenic highways within or adjacent to the project site. Highway 1 is eligible for listing as a State scenic highway³ and is located 350 feet northeast of the project site, but is not presently listed as an official State scenic highway. The project site is not readily visible to motorists on Highway 1 due to the dense vegetation along Highway 1's western shoulder and fencing blocking much of Calle del Onda from sight.

Discussion of Impacts

a) *Have a substantial adverse effect on a scenic vista?*

Less-than-Significant Impact. The project site is located near Stinson Beach and the Pacific Ocean, which may be considered scenic resources important to Marin County per the Marin Countywide Plan. The visual character of the Stinson Beach Community is defined by coastal resources alongside low-density residential and commercial development. In the immediate vicinity of the project site, several single-family residences sit along the beach. The project itself would not alter public views of Upton Beach, Stinson Beach, or the Pacific Ocean, or views of the project site from publicly available vantage points. The project would introduce mostly subgrade infrastructure that would have minimal above-ground visibility.

The proposed septic system, however, would increase the likelihood of future residential development on the project site. This would introduce another single-family residence into the viewshed, reducing views of the ocean and the beach available from Calle del Onda. This effect would be minimal, given the already extensive presence of single-family residential development in the vicinity. Furthermore, Calle del Onda is a local street experiencing no through traffic, and most views of the beach and the ocean are available from the beach itself, where any future residence would be behind viewers and would not affect scenic vistas.

As the project would not alter views and potential future impacts associated with the project would only do so minimally, the project would not have a substantial adverse effect on a scenic vista, including vistas of the beach and the ocean; and a less-than-significant impact would occur.

³ Dennis Cadd Brian Shultis, "OFFICIALLY DESIGNATED STATE SCENIC HIGHWAYS AND HISTORIC PARKWAYS," accessed July 8, 2019, http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm.

b) *Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

No Impact. The project site is not located within or near an officially-designated State scenic highway. It is, however, just west of Highway 1 (Shoreline Highway), an eligible state scenic highway. Highway 1 is known for its pleasant views of the Pacific coastline and coastal agricultural operations. Accordingly, for the purposes of this discussion, Highway 1 is considered a scenic highway.

The project would not immediately bring visual change to the area. During construction, the presence of trucks and equipment would disrupt the area's aesthetics, but this would be temporary. On completion, the presence of mostly subgrade wastewater infrastructure would not alter views of the area. In the long-term, the presence of an intact wastewater system would enable future residential development on the site. This would also bring minimal visual change to the area given the presence of several existing single-family residences with a similar spatial footprint. Furthermore, the project site is not visible to motorists and cyclists along Highway 1. A dense layer of vegetation and an existing fence shield residences along Calle del Onda from view.

As short-, medium-, and long-term visual change from the project would be minimal and the project site is not visible from Highway 1, the project would not damage scenic resources within a state scenic highway, and no impact would occur.

c) *In non-urbanized 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 points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

Less-than-Significant Impact. Public views of the project site include views from Calle del Onda looking south and Stinson and Upton Beaches looking north. Presently, views from both vantage points prominently feature white sandy beaches as well as single-family residential development. The project site is zoned for residential, two-family coastal development.

The project's potential visual changes can be considered in three-time frames, the short-, medium-, and long-term. In the short-term, construction equipment would alter the visual character of the site. Given the small scope of the project, construction would be minimal in duration and little equipment would be introduced. Visual change associated with construction would therefore be temporary and limited in scope. In the medium-term, the project would introduce mostly subgrade infrastructure that would introduce little immediately apparent visual change. In the long-term, the presence of a functional wastewater disposal system would increase the likelihood of construction of a new single-family home. The specific design details of such a home have not yet been determined, but the maximum habitable space would be 1,400 sq

ft. Given that the area is designated for medium-density residential development, such a future residence would be consistent with the area's zoning and would not introduce a significant visual impact.

In summary, the project would lead to little visual change. The project could indirectly induce future residential development of the site, but this would be existing with the area's existing visual character and zoning. As such, the project would not conflict with applicable zoning or degrade the existing visual character or quality of public views of the site, and a less-than-significant impact would occur.

d) *Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?*

Less-than-Significant Impact. No nighttime construction that would require the introduction of a new light source would occur, so construction would not create a new source of substantial light or glare. Following construction, the project would introduce a new wastewater disposal system. This system would not require or introduce any new sources of light or glare. The project would accordingly not introduce a new source of light or glare.

Although the project itself would not require the introduction of new light sources, the project would increase the likelihood of future residential development on the site. Any such residential development would be confined to less than 1,400 sq ft of habitable space, but specifics are otherwise undetermined at this time. Given the small size of the potential future residence, new light sources would be insubstantial as to adversely affect day or nighttime views in the area and would be consistent in magnitude with other residential light sources in the neighborhood. Furthermore, any future residential development would be similar in size and lighting needs to nearby adjacent residences and would be consistent with the existing light environment. Future development would be subject to environmental and design review by Marin County, which has design guidelines containing provisions on outdoor lighting selection for single-family residential development.⁴

As the project would not introduce any new sources of light or glare and any potential future sources of light or glare which may indirectly result from the project would be insufficient to adversely affect views and would be subject to Marin County design guidelines, the project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Thus, a less-than-significant impact would occur.

⁴ *Marin County Community Development Agency, "Single-Family Residential Design Guidelines," July 19, 2005, https://www.marincounty.org/~media/Files/Departments/CD/Planning/CurrentPlanning/Publications/SingleFamilyDesignGuidelines/SFRDG_Pt1_BOS_Final.pdf.*

4.2 AGRICULTURAL AND FORESTRY RESOURCES — Would the project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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??	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is designated for low-density residential development and does not contain any farmland or forestry land. Per the California Department of Conservation’s Farmland Mapping and Monitoring Program, the project site is classified as urban/built-up land and is not classified as Prime, Statewide, or Locally Important Farmland.⁵ The proposed project is located in a developed residential beach community and follows existing roads, easements, and rights-of-way. Surrounding land consists of residential and recreational uses.

⁵ California Department of Conservation, Marin County Important Farmland 2016, April 2018, <ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2016/mar16.pdf>.

Discussion of Impacts

- a) ***Would the project 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?***

No Impact. According to the 2010 Farmland Mapping and Monitoring Program from the State Department of Conservation, the project site is located in an area designated as urban and built-up land. The project site and its surroundings consist of residential and recreational land uses, and there is no farmland in the immediate vicinity of the project site. The proposed project would, therefore, not convert Prime Farmland, Unique Farmland, or Farmland of Statewide importance to non-agricultural use and no impact would occur.

- b) ***Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?***

No Impact. The project site and its immediate surroundings are not zoned for agricultural use and are not under a Williamson Act contract. There would be no conflict with agricultural zoning or a Williamson Act Contract, and no impact would occur.

- c) ***Would the project 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 Timberland Production (as defined by Government Code section 51104(g))?***

No Impact. The project site is not on or near any land zoned for forest land, timberland, or timberland zoned Timberland Production. Therefore, the project would have no impact.

- d) ***Would the project result in the loss of forest land or conversion of forest land to non-forest use?***

No Impact. The proposed project site is not located on forest land. Nearby Golden Gate National Recreation Area and Marin Municipal Water District lands could be considered forestlands, but the project would not result in the loss or conversion of any of these lands to other uses. Therefore, the proposed project would not result in the loss or conversion of forest land to non-forest use. No impact would occur.

- e) ***Would the project 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?***

No Impact. The project site is in a residential area that does not include farmland or forest land. Therefore, the proposed project would not result in the conversion of forest land or farmland to a non-forest use or a non-agricultural use, and would thus have no impact on forestry or agricultural resources.

4.3 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>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The project site is located in western Marin County. In Marin County, wind speeds are highest along the west coast, averaging about 8 to 10 miles per hour. Temperatures show little variation throughout the year in coastal Marin and are usually in the high-50's in the winter and low-60's in the summer. Air pollution potential is low in western Marin relative to other parts of the County due to wind speeds and the lack of polluting industries. Motor vehicle traffic is a significant source of emissions in Marin County, but western Marin County has relatively fewer major roadways.⁶

Marin County is in the San Francisco Bay Area Air Basin and is under the jurisdiction of the Bay Area Air Quality Management District (Air District). Ambient air quality standards have been established at both the state and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone (O₃), respirable particulate matter (PM₁₀), and fine particulate matter (PM_{2.5}).⁷

High ozone levels are caused by cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_x), which react to form ozone under certain weather conditions. Controlling emissions of these precursor pollutants is therefore the focus of the Bay Area's attempts to reduce ozone levels.

⁶ Bay Area Air Quality Management District, "California Environmental Quality Act Air Quality Guidelines," May 2017, http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en.

⁷ Bay Area Air Quality Management District, "Air Quality Standards and Attainment Status," January 5, 2017, <http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status>.

Particulate matter pollution control efforts are focused on respirable particulate matter, or particles that have a diameter of 10 micrometers or less (PM₁₀), and fine particulate matter, particles have a diameter of 2.5 micrometers or less (PM_{2.5}). Elevated concentrations of PM₁₀ and PM_{2.5} are the result of both cumulative regional emissions and localized emissions.

Toxic air contaminants are a broad class of airborne compounds known to cause chronic health impacts. Toxic air contaminants are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). Toxic air contaminants are regulated at the regional, state, and federal level based on risk to human health.

Children, elderly, asthmatics, and people with pre-existing health conditions are considered sensitive receptors and may be especially vulnerable to the effects of air pollution. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks.⁸

Discussion of Impacts

a) ***Would the project conflict with or obstruct implementation of the applicable air quality plan?***

Less-than-Significant Impact. The Air District has issued several plans to attain ambient air quality standards in the San Francisco Bay Air Basin, including its 2017 Clean Air Plan, a multi-pollutant plan designed to take an integrated strategy to reduce emissions of ozone, particulates, toxic air contaminants, and greenhouse gases. The Air District's 2017 CEQA Guidelines outline a list of questions the lead agency should analyze when determining whether a project would be consistent with applicable air quality plans. Each question is discussed in the context of the project below:

1. *Does the project support the primary goals of the air quality plan?*

To assess whether the project supports the air quality plan's primary goals, the Air District recommends assessing whether the project would exceed approved thresholds of significance. As discussed in greater detail under impacts b-d below, the project would not result in any significant and unavoidable air quality impacts. According to the Air District's guidance, the project would therefore be consistent with the applicable air quality plan.

2. *Does the project include applicable control measures from the air quality plan?*

No control measures from the Air Quality Plan are applicable to residential wastewater systems. Building control measures generally include calls for Air District rule-making and incentive programs, including for the decarbonization of buildings. Consistent with California law and with control measures on building decarbonization, should a single-family residence be constructed on the site, solar

⁸ Bay Area Air Quality Management District, "California Environmental Quality Act Air Quality Guidelines."

panels would be required. The project would therefore 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 project would involve approval and construction of a wastewater system capable of serving one 1,400 sq ft single-family residence. This would not impede implementation of Air Quality Plan control measures, as it would not create any conflicts with control measures and would not preclude compliance for future projects on or near the site.

As the project supports the primary goals of the Air Quality Plan, includes applicable control measures, and does not disrupt or hinder implementation of control measures, the project would not conflict with or obstruct implementation of the applicable air quality control plan; and a less-than-significant impact would occur.

- b) ***Would the project 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?***

Less-than-Significant Impact. The project's most pronounced increase in criteria pollutant emissions would come during the construction phase. Over a course the short construction period, motorized equipment would be used to prepare the site, remove the existing system, and install the intermittent sand filter system. This would result in emissions of ozone precursors and particulate matter. Given the short duration of construction and the small area that would be disturbed, this emissions increase would be temporary and minimal, and would be insufficient to be considered cumulatively significant.

Operation of the newly installed wastewater system would create emissions associated with maintenance roughly once every six months. This would include transportation of maintenance personnel to and from the site and use of any motorized equipment necessary to keep the system operational. There would be no on-site emissions associated with day-to-day operations of the system, as no chemicals are required for treatment in an intermittent sand filter system. Given the small size of the system and its potential future service population, which would be limited to the inhabitants of one single-family home, the project's emissions could not be considered cumulatively significant.

While the specifics of any potential future residential development on the site are unknown at this time, any future development would be limited to one single-family residence. This is below the Air District's screening criteria for criteria pollutants, which state that 325 dwelling units would be needed to create an operational air quality impact and 114 dwelling units would be needed to create a construction-related air quality impact.

In summary, the project would lead to increased emissions of criteria pollutants for which the air basin is designated non-attainment. Given the small scope of the project, these emissions would not be cumulatively considerable. Thus, the project would not lead to a cumulatively considerable increase in any criteria pollutant for which the area is considered non-attainment, and a less-than-significant impact would occur.

c) ***Would the project expose sensitive receptors to substantial pollutant concentrations?***

Less than Significant with Mitigation Incorporated. As discussed in response to item b above, the project would result in minimal emissions increases. Although the project's emissions would be of a relatively small quantity, the project would occur in an established residential community, and therefore has the potential to expose sensitive receptors to pollutants. This is particularly true during the construction phase, when motorized equipment would be used on-site and excavation and grading could create dust emissions. Mitigation Measure AIR-1 requires the contractor to implement Air District-recommended best management practices, which would minimize the exposure of sensitive receptors to air pollutants. With implementation of this measure, the project would not expose sensitive receptors to substantial pollutant concentrations; and impacts would be less than significant with mitigation incorporated.

Mitigation Measure AIR-1

Throughout the wastewater system construction process, the Contractor shall implement the follow best management practices recommended by the Air District:

1. All haul trucks transporting soil, sand, and other loose material off-site shall be covered.
2. 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 Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
3. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
4. A publicly visible sign shall be posted with the telephone number and person to contact at the District regarding dust complaints. Upon receipt of a dust complaint, this person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

d) ***Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

Less than Significant with Mitigation Incorporated. According to the Air District's 2017 CEQA Guidelines, assessment of a project's odor impacts is inherently qualitative in nature. On-site wastewater disposal systems have the potential to create unpleasant odors, but regular maintenance as described in the Project Description would assure that the system is maintained in good working order and does not create excessive odors. Furthermore, per District Regulation Title IV 4.07.720 the system would be subject to an inspection not less than every two (2) years. This inspection, per 4.07.732, would include the inspection for possible ponding, standing water, breakout and noticeable odors. Should such odors exist the District would require the Applicant to have sludge or scum buildup removed, which would assure that buildup does not grow sufficiently large to create an odor nuisance.

Apart from the wastewater system, the project would not directly or indirectly introduce any new uses or infrastructure that may create substantial emissions such as those leading to odors. The use of motorized equipment during construction could lead to some odors, but this would be minor and temporary given the small size of the project and the short duration of construction. As such, the project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and a less-than-significant impact would occur.

4.4 BIOLOGICAL RESOURCES — Would the project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
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 Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

In December 2015, WRA, Inc. (WRA) assessed on-site biological resources through database searches, literature review, and a site visit. In July 2019, an update was performed to reflect the updated project design and to verify present on-site biological conditions. The primary objectives of WRA's study was to determine whether there are sensitive biological resources near the project site, to map biological constraints on the project site, and to determine whether the project would result in a potentially significant adverse impact to biological resources under CEQA.

WRA did not observe any sensitive plant or wildlife species within the project site, nor did they observe any habitat conditions which could support sensitive species or soil conditions which could support wetlands. The project site consists of developed land (<0.1 acre), beach (0.2 acre), and ice plant mat (0.16 acre). Beach on the project site does not contain dune-like attributes such as dune vegetation or morphological characteristics shaped by wind and wave energy. The project site is regularly disturbed by the extensive presence of humans and dogs in the area.

Discussion of Impacts

- a) ***Would the project 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 Game or U.S. Fish and Wildlife Service?***

No Impact. There are no sensitive plant or wildlife habitat types within the project site. 100 special-status plant species and 84 special-status wildlife species have been documented in the project region. There is no suitable habitat for any of these species present within the project site due to on-site hydrologic, soil, topographic, and vegetative conditions. The project site's history of disturbance and ongoing human activity contribute to the lack of suitable habitat for special-status plant and animal species.

Eleven plant species were observed in the parcel during WRA's site visit, none of which are considered sensitive and six of which are considered moderately or highly invasive by the California Invasive Plant Council. Ice plant, an invasive, non-native plant dominates the site. No special-status wildlife species were observed on the project site, nor were habitat conditions that would be suitable for special-status wildlife species documented to occur in the project region.

As there are no special-status plant or wildlife species within the project site and there is no suitable habitat for special-status plant and wildlife species, the project would not have a substantial adverse effect directly or through habitat modification on any species identified as a candidate, sensitive, or special-status; and no impact would occur.

- b) ***Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

Less-than-Significant Impact. The project site contains roughly 106 sq ft of developed land, 0.2 acre of sand beach/dune, and 0.16 acre of iceplant mats. None of these natural communities are designated sensitive by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service. Relevant local and regional plans include the Marin Countywide Plan and the Marin Local Coastal Program.

The Marin Local Coastal Program designates beaches as an environmental sensitive habitat area (ESHA), which is defined as an area in which biological resources are rare or especially valuable due to their special nature and which could be easily degraded by human activity. Based on soil composition characteristics, WRA biologists determined that the project site contains 0.2 acre of beach. Beach within the project site does not provide habitat for any especially rare or valuable plant or animal species. There is a high degree of human activity that currently limits the beach's biological value. The project would therefore create little change in the value of biological resources associated with on-site beach.

In summary, there is one sensitive natural community present, as defined by local plans. This natural community is presently disturbed by extensive on-site human presence, so the project would lead to little change in the value of on-site biological resources. Thus, the project would not have a substantial adverse effect on sensitive natural communities, and a less-than-significant impact would occur.

- c) ***Would the project 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?***

Less-than-Significant Impact. The project site contains well-drained sands with rapid runoff and high permeability, making wetland conditions very unlikely. Lack of on-site wetlands was verified through a site visit and review of aerial imagery. Tidal waters at Stinson Beach at an elevation of 7.8 feet North American Vertical Datum of 1988 (NAVD88) are considered subject to the jurisdiction of the U.S. Army Corps of Engineers. The project site is over 100 feet east of this elevation. As there are no wetlands present on the project site, the project would not directly impact any protected wetlands through removal or fill.

The project site has a seasonally high groundwater table, which would drain to tidal waters or other protected wetland features. The project was designed to accommodate for this, using intermittent sand filtration and raised bed dispersal fields to minimize the likelihood of untreated wastewater coming into contact with seasonally high groundwater. As such, the project would not indirectly affect wetlands through sourcewater pollution or other means.

In conclusion, the project would not directly or indirectly adversely affect any state or federally protected wetlands through removal, fill, hydrological interruption, or other means. Thus, a less-than-significant impact would occur.

- d) ***Would the project 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?***

Less than Significant with Mitigation Incorporated. As discussed in response to impact a) above, the project site and its surroundings have an extensive human presence that limits habitat utility for wildlife. The project site is within an established residential community adjacent to a popular recreation site. Although the project site is of limited habitat quality, it remains possible that some common bird species could establish nests within on-site vegetation. Construction activities could disturb or harm the nests should they occur during nesting bird season. While disturbance of common bird species' nest does not constitute a significant impact under CEQA, Mitigation Measure BIO-1 is proposed to minimize the likelihood of nest disturbance. As the project site is of limited utility as a migratory corridor or nursery site and measures are proposed to minimize the likelihood of disturbing nesting species, the project would not substantially interfere with wildlife movement or with the use of wildlife nursery sites. Accordingly, impacts would be less than significant with mitigation incorporated.

Mitigation Measure BIO-1

The Project shall conduct initial ground disturbance and remove vegetation outside the nesting season (i.e., September 1 to January 31) to avoid any potential impacts to nesting birds.

- e) ***Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?***

Less-than-Significant Impact. Primary local plans, policies, and ordinances with jurisdiction over the project site include the Marin Countywide Plan, the Marin Local Coastal Plan, and the Marin County Code. Relevant policies require development proposals within or adjacent to an ESHA to fund a biological site assessment documenting site constraints and recommending mitigation for impacts to biological resources, prohibit development in coastal dunes, and prohibit development in certain portions of Stinson Beach.

Consistent with these policies, WRA performed a biological site assessment, which is documented in Appendix A. The project site does not contain coastal dunes and is not within a portion of Stinson Beach where the Local Coastal Program forbids development. Thus, the project would not conflict with any local policies or ordinances protecting biological resources, and a less-than-significant impact would occur.

f) ***Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?***

No Impact. There are no adopted habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans with jurisdiction over the project site. Thus, the project would not conflict with any such plans and no impact would occur.

4.5 CULTURAL RESOURCES — Would the Project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The District contracted with Tom Origer & Associates (Origer) to document whether cultural and/or archaeological resources are present on the project site and to assess the likelihood of the project adversely affecting the significance of any such resources (Appendix B). Origer reviewed archival information at the Northwest Information Center at Sonoma State University (File No. 19-0069), including such sources as the Office of Historic Preservation’s Historic Property Directory, 19th and 20th-century maps and aerial photographs of the site, and literature describing the site’s history and prehistory. Origer used a model considering landform, slope, and proximity to water to determine the site’s sensitivity for buried resources. Additionally, Origer performed a field survey of the project site on July 9, 2019. Through the research methods described above, Origer did not identify any historical resources or a high sensitivity for archaeological resources or buried remains.

Discussion of Impacts

a) *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?*

No Impact. The project site does not contain any resource listed or eligible for listing in the National or State Register of Historic Places. It does not contain a resource included in a local register of historic resources or identified as significant in a historical resource survey. Additionally, the project site does not contain any object, building, structure, site, area, place, record, or manuscript that a lead agency determined to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Therefore, the project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5, and no impact would occur.

b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?*

No Impact. Pursuant to State CEQA guideline 15064.5, record searches, field surveys, and research were conducted to determine the potential presence of historic and archaeological resources within the project site. The project site does not contain any known historical or archaeological resources and has a low potential to contain buried cultural deposits based on the presence of loose, sandy soils and artificial fill.

Although it is unlikely that project work would unearth any archaeological resources, in keeping with the CEQA guidelines, if archaeological remains are uncovered, work at the place of discovery would be halted immediately until a qualified archaeologist could evaluate the finds (§15064.5 [f]).

As there are no known archaeological resources on-site, the likelihood of accidental discovery is low, and the Contractor would be subject to legal requirements governing what to do in the event of accidental discoveries, the project would not cause an adverse change in the significance of any archaeological resources, and no impact would occur.

c) *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

No Impact. The project site contains loose sandy soils and artificial fill which are unlikely to contain buried human remains. Although the accidental discovery of human remains during construction is unlikely, the contractor would be required to comply with California Health and Safety Code Section 7050.5 and California Public Resources Code Sections 5097.5, 5097.9 et seq., regarding the discovery and disturbance of human remains, should any be discovered during project construction.

According to Public Resources Code 5097.98 and Health and Human Safety Code 7050.5, if human remains are encountered during construction, disturbance must be halted in the vicinity of the find and the county coroner contacted. If the coroner determines the remains are Native American, the coroner must contact the Native American Heritage Commission, which would then identify the person(s) believed to be most likely descended from the deceased person. The most likely descendent would make recommendations for treating the remains with appropriate dignity.

In summary, the likelihood of accidental discovery of human remains is low due to the soil types present within the project site. Should human remains be discovered during septic system construction, the Contractor must comply with applicable laws governing accidental disturbance of human remains. Thus, the project would not disturb human remains, and no impact would occur.

4.6 ENERGY — Would the Project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>	<i>Source</i>
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	26, 27
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	26, 27

Environmental Setting

Residential uses comprise the greatest portion of Marin County’s electricity consumption, accounting for 49% of energy use as of the year 2000.⁹ Title 24 of the California Code of Regulations sets forth energy efficiency standards for new development in the State of California. The Marin County Climate Action Plan outlines Marin County’s strategies to reduce greenhouse gases, which include increased use of renewable energy and enhanced energy efficiency in the unincorporated County.

Discussion of Impacts

- a) ***Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?***

Less-than-Significant Impact. During construction, energy resources would be required to transport equipment, workers, and solid waste to and from the site as well as to power construction equipment. On-site vehicle staging and minimization of equipment idling pursuant to California law would ensure that energy resources would not be used in a wasteful or inefficient manner during construction.

Occasional operation of pumps, alarm systems, and other energy-using equipment would be required, but the newly installed septic system would require little energy use, as it would be primarily gravity-operated. Energy use would be required for inspection and maintenance trips to the project site to maintain the system in working order and clear its contents. These trips are anticipated to be required roughly every six months, and given their infrequency, would not necessitate wasteful, inefficient, or unnecessary energy consumption.

⁹ California Department of Conservation, “Marin County Important Farmland 2016.”

In the event that a home is constructed on the site, energy associated with pumping and heating water would be relatively low, as low-flow devices are required for the septic system to operate properly. Any potential future homes on the site would be less than 1,400 sq ft and would be required to comply with Title 24 energy efficiency standards. Thus, the project would not indirectly lead to the inefficient, wasteful, or unnecessary consumption of energy.

In summary, the project would require energy use for the construction and maintenance of the wastewater disposal system. The project could indirectly lead to future energy use, but this would accommodate a small building required to use energy-efficient technology and materials. As such, the project would not result in a potentially significant environmental impact due to the wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation; and a less-than-significant impact would occur.

b) *Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

Less-than-Significant Impact. Marin County's Climate Action Plan and Title 24 of the California Code of Regulations are the primary local and state plans and policies on renewable energy and energy efficiency with jurisdiction over the project. Marin County's Climate Action Plan was approved in 2015 and contains various strategies to reduce greenhouse gas emissions in the unincorporated county, including energy efficiency and promotion of renewable energy. Title 24 outlines energy efficiency requirements specifying the types of insulation, water conveyance, and other materials and technology to be used in low-rise residential development.

As discussed in Chapter 3, Project Description, the proposed wastewater system and any potential future on-site residential development are required to use water-efficient technology such as low flow toilets and showerheads. Similarly, the project would be required to comply with California Code of Regulations Title 24, which requires the use of energy-efficient technology in new buildings. The project would therefore be consistent with the Marin County Climate Action Plan or Title 24 and would not conflict with or obstruct a local or state plan for renewable energy or energy efficiency.

4.7 GEOLOGY AND SOILS — Would the Project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is located in the San Francisco Bay Area, one of the most seismically active urban regions in the country. Several major faults run through the Bay Area, including the San Andreas Fault, which is roughly 1.3 miles west of the project site. The project site is not within an Alquist-Priolo Fault Zone.¹⁰ Based on United States Geological Survey and California Geological Survey data, the Association of Bay Area Governments resilience mapping tool describes the project site as having a probable violent shaking severity level in an earthquake and very high susceptibility to liquefaction.¹¹ The area has not been investigated for landslide risk but is in a flat area with few potential debris sources during a landslide.

According to a 2015 site review by District staff, project site soils are homogeneous sand to a depth of 64 inches.¹² The project site and its surroundings are a blend of dunes and beaches, which are primarily comprised of loose sandy soils with poor percolation.

Discussion of Impacts

a-i) *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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?*

No Impact. According to the Association of Bay Area Government's Bay Area Hazards resilience mapping tool, the project site is not located within an Alquist-Priolo fault zone. The nearest such fault zone is approximately 1.3 miles west of the project site. Given that there are no Alquist-Priolo fault zones within the project site, the project site is not at risk of surface rupture. As such, the project would not directly or indirectly cause the risk of loss, injury, or death involving the rupture of a known earthquake fault, and no impact would occur.

¹⁰ California Department of Conservation, "Earthquake Zones of Required Investigation," accessed July 8, 2019, <https://maps.conservation.ca.gov/cgs/EQZApp/app/>.

¹¹ Association of Bay Area Governments, United States Geological Survey, and California Geological Survey, "Bay Area Hazards," accessed July 8, 2019, <http://gis.abag.ca.gov/website/Hazards/?hlyr=concordGV&co=6013>.

¹² Stinson Beach County Water District, "Memorandum to Committee," December 4, 2017.

a-ii) *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?*

Less than Significant. The project site is located approximately 1.3 miles west of the San Andreas Fault, a major faultline with the potential to cause severe seismic groundshaking. The Association of Bay Area Governments classifies the project site's risk of groundshaking during an earthquake along this fault as probably violent.

Although seismic ground shaking may occur at the site, the proposed project would be designed and constructed consistent with the most current version of the California Building Code, which includes specifications and design criteria to minimize damage from anticipated ground shaking and liquefaction. Incorporation of these specifications and design criteria would reduce potential impacts associated with ground shaking to a less than significant level. Therefore, the proposed project would not expose people or structures to substantial effects related to ground shaking. This impact is less than significant.

a-iii, c) *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction; or 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?*

Less than Significant. According to the Association of Bay Area Governments' resilience mapping tool, the project site is located in an area very susceptible to liquefaction. Liquefied soils may cause building instability due to foundational damage and may result in underground tanks floating within the liquid-like soils. Additionally, when subsurface soil liquefies, lateral spreading may occur. Lateral spreading may be particularly damaging to underground tanks and utilities.¹³

Although seismic ground shaking may occur at the site, the proposed project would be designed and constructed consistent with the most current version of the California Building Code, which includes specifications and design criteria to minimize damage from anticipated ground shaking and liquefaction. Incorporation of these specifications and design criteria would reduce potential impacts associated with ground shaking to a less than significant level. Therefore, the proposed project would not expose people or structures to substantial effects related to liquefaction. This impact is less than significant.

¹³ US Environmental Protection Agency Office of Water, "Earthquake Resilience Guide for Water and Wastewater Utilities," March 2018, <https://www.epa.gov/sites/production/files/2018-02/documents/180112-earthquakeresiliencegide.pdf>.

a-iv) *Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?*

No Impact. The project site is in a flat, low-lying area with no potential debris flow sources and no history of landslides.¹⁴ Septic tank installation's direct and indirect impacts would not exacerbate landslide risks within the project site or in downslope areas. As such, the project would not directly or indirectly cause potential substantial adverse effects including the risk of loss, injury, or death involving landslides, and no impact would occur.

b) *Would the project result in substantial soil erosion or loss of topsoil?*

Less-than-Significant Impact. The project site is presently overrun with non-native vegetation, which would be removed during construction. Although this would increase the project site's susceptibility to erosion, the area of disturbance would be relatively small, and soil erosion and loss of topsoil could not be considered substantial. Nonetheless, as described in Chapter 3, Project Description, the Contractor would use erosion control measures such as placement of straw in disturbed areas during construction. As such, project construction would not cause substantial soil erosion or loss of topsoil.

At the end of construction, disturbed areas would be filled with native fill or medium loam. This would present a slight increase in the likelihood of soil erosion and loss of topsoil, as vegetation would no longer cover the project site. The area that would be denuded is approximately 0.16 acre in size; so while the likelihood of erosion would slightly increase in this area, the area is insufficiently large for this occurrence to constitute substantial soil erosion. This area would remain denuded and no additional vegetation removal would be required in the future, so potential future projects would not result in any further exacerbation of soil erosion. As such, the project would not result in substantial soil erosion or loss of topsoil, and a less-than-significant impact would occur.

d) *Would the project be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?*

No Impact. Soil expansion occurs when soils absorb water and increase in volume. This occurrence can exert force upon and cause damage to building foundations and is common in clay-like soils that readily absorb water. The project site contains loose, sandy soils that percolate quickly and do not absorb water.¹⁵ As project site soils are

¹⁴ Association of Bay Area Governments, United States Geological Survey, and California Geological Survey, "Bay Area Hazards."

¹⁵ United States Department of Agriculture, "Custom Soil Resource Report for Marin County, California," October 22, 2018.

not expansive, the project would not create substantial direct or indirect risks to life or property due to location on expansive soil. No impact would occur.

- e) ***Would the project 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?***

Less-than-Significant Impact. While the fast percolating soils underneath the project site are not well-suited for wastewater disposal systems, the project was designed to account for this. The proposed intermittent sand filter system includes raised bed dispersal fields and pre-treatment in an intermittent sand filter. These design features would reduce the strength of wastewater and make up for the loss of wastewater treatment due to fast percolating sands, resulting in 40-90% reductions in wastewater constituents of concern relative to comparable systems absent intermittent sand filters.¹⁶ In conclusion, the design features of the proposed project make the system compatible with on-site soil types. The project would therefore not result in any environmental impacts associated with soils incapable of adequately supporting use of septic tanks or alternative wastewater disposal systems, and a less-than-significant impact would occur.

- f) ***Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?***

No Impact. There are no unique paleontological resources or unique geologic features known to exist within the project site. Disturbance of the loose, sandy soils underneath the project site would occur at relatively shallow depths. Disturbance occurred at similar depths during previous construction of a home and wastewater system on the site, so were any unique paleontological or geological resources present, their prior discovery would have been likely. As there are no unique paleontological resources or sites or unique geological features at the project site, the project would not directly or indirectly destroy any of these resources; and no impact would occur.

¹⁶ *Stinson Beach County Water District, "Memorandum to Committee."*[Dec, 4th, 2017}

4.8 GREENHOUSE GAS EMISSIONS — Would the project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Greenhouse gases are heat-trapping gases that, when emitted to the earth’s atmosphere, contribute to an abnormally fast rate of planetary warming. The consequences of these warming patterns include rising sea levels and increased frequency and intensity of natural disasters, among other issues. The major greenhouse gases released by human activity are carbon dioxide (CO₂), methane, and nitrous oxide. Although less potent than other GHGs such as methane, CO₂ is the most common and therefore the greatest contributor to man-made global warming. Accordingly, GHGs are expressed in terms of CO₂ equivalents (CO_{2e}) based on their global warming potential.

Assembly Bill 32, adopted in 2006, established the Global Warming Solutions Act of 2006 which requires the State to reduce greenhouse gas emissions to 1990 levels by 2020. Senate Bill 97, adopted in 2007, required the Governor’s Office of Planning and Research to develop CEQA guidelines for the mitigation of greenhouse gas emissions, and the Resources Agency certified and adopted the amendments to the guidelines on December 30, 2009. According to CEQA Guidelines Section 15064.4, the lead agency may quantitatively or qualitatively assess the project’s impact on greenhouse gas emissions. The lead agency should consider the project’s reasonably foreseeable incremental contribution to the effects of climate change using evolving scientific knowledge, state regulatory schemes, and an appropriate timeframe for the project.

The Marin Climate Action Plan outlines goals and policies for reducing greenhouse gas emissions and adapting to climate change in unincorporated Marin County. The plan targets a more aggressive emission reduction goal than the Statewide AB 32 target, calling for a 30% reduction below 1990 emission levels by 2020. In 2012, unincorporated Marin County emitted approximately 477,000 metric tons CO_{2e}, approximately 7.1 metric tons per capita. The plurality of these emissions are from on-road transportation and building energy (35% each), with the next greatest sources of emissions being agriculture (23%), off-road equipment (4%), solid waste treatment (2%), wastewater treatment (1%), and water conveyance (0.2%).¹⁷

¹⁷ *Marin County and ICF International, “Marin County Climate Action Plan,” July 2015, https://www.marincounty.org/-/media/files/departments/cd/planning/sustainability/climate-and-adaptation/execsummarymarincapupdate_final_20150731.pdf?la=en.*

Discussion of Impacts

- a) ***Would the project generate greenhouse gases, either directly or indirectly, that may have a significant impact on the environment?***

Less-than-Significant Impact. In the short-term, project construction would generate greenhouse gases through the transportation of workers and equipment to and from the site and the use of petroleum-powered equipment. Construction would occur over a relatively short time period and a small area.

Following construction, the septic system would mostly operate passively through the use of gravity and would therefore generate few greenhouse gases. A 115 Volt power source would be present and would operate intermittently. In the event that the wastewater system is eventually connected to a home, occasional vehicle trips would be required, and greenhouse gas-generating equipment would be used to dispose of the system's contents and maintain the system. This would occur approximately once every six months.

In the long-term, the project may facilitate the eventual construction of a maximum of one residence, which would generate greenhouse gases through energy use and transportation of residents to and from the home. The home would be constructed in compliance with Title 24 energy standards, which require the use of energy-efficient building materials and technologies such as insulation, light fixtures, and climate control units. Potential GHGs associated with transportation would be limited to the small number of people occupying the single-family home.

Given the scope of the project and of Marin County greenhouse gas emissions, the project's cumulative contribution would be negligible. The project is limited to the approval and construction of a wastewater disposal system, which would mostly operate through gravity and require little fuel or energy use. System maintenance would generate greenhouse gases, but is only anticipated to occur once every six months. The project may indirectly lead to the eventual construction of a home on the site, which would be no more than 1,400 sq ft in size and would accommodate few residents. This would be underneath the Air District's screening criteria for greenhouse gas-related impacts, which state that 56 dwelling units are necessary to create a cumulatively considerable contribution to greenhouse gas emissions.

As the project would generate a relatively small quantity of emissions due to its size and scope, its contribution to greenhouse gases and climate change would not be cumulatively considerable. Accordingly, the project would not directly or indirectly generate greenhouse gases which may have a significant environmental impact, and a less-than-significant impact would occur.

b) *Would the project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?*

Less-than-Significant Impact. Pursuant to AB 32, the State of California is required to reduce greenhouse gas emissions to 1990 levels by 2020 and 80% below 1990 levels by 2050. These reductions are to be attained through a state-wide effort, so local jurisdictions throughout the state have created Climate Action Plans to put forth strategies and policies for their community to attain AB 32 requirements.

Marin County's Climate Action Plan was approved in 2015 and contains various strategies to reduce greenhouse gas emissions in the unincorporated county. These actions are broadly divided into the categories of energy efficiency and renewable energy; land use, transportation, and off-road equipment; water conservation and wastewater treatment; waste reduction, reuse, and recycling; and agriculture. Policies relevant to the project generally include land use, water conservation, and energy efficiency policies. In general, these policies call for compact land use and infill development and use of water- and energy-efficient infrastructure.

As discussed in Chapter 3, Project Description, the proposed wastewater system and any potential future on-site residential development are required to use water-efficient technology such as low flow toilets and showerheads. Similarly, the project would be required to comply with California Code of Regulations Title 24, which requires the use of energy-efficient technology in new buildings. The project would promote infill development by placing a new septic system on a site within an existing residential neighborhood. The project would therefore be consistent with the Marin County Climate Action Plan and would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions; and a less-than-significant impact would occur.

4.9 HAZARDS AND HAZARDOUS MATERIALS — Would the proposed Project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 proposed Project result in a safety hazard or excessive noise for people residing or working in the proposed Project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Under Government Code Section 65962.5, the California Department of Toxic Substance Control maintains a list of hazardous substance sites. This list, referred to as the “Cortese List,” includes Hazardous Wastes and Hazardous Substances Sites listed on the DTSC Envirostor website, Open Leaking Underground Storage Tank Sites listed on the State Water Quality Control Board’s (State Water Board) Geotracker website, solid waste disposal sites identified by the State Water Board with waste constituents above hazardous waste levels outside the waste management unit, sites with active cease-and-desist or cleanup and abatement orders issued by a Regional Water Quality Control Board (Regional Water Board), and hazardous waste facilities subject to corrective action pursuant to Health & Safety Code Section 25187.5, as identified by the Department of Toxic Substances Control.

According to the State Water Board’s Geotracker database, the project site is not a hazardous substances site. The nearest such site listed on this database is approximately 0.27 miles west of the project site. This site listed is under ID #T0604100025 for leaking underground storage tank cleanup. The Water Board closed cleanup by issuing a No Further Action Letter in 1997.¹⁸ Similarly, the Department of Toxic Substance Control’s Envirostor database does not list the project site as a hazardous substances site. The nearest listed site is approximately 1.2 miles southwest and is listed under ID #J09CA0959 for military evaluation. The Department of Toxic Substance Control issued a No Further Action Letter in 2014.¹⁹

Discussion of Impacts

a) *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Less-than-Significant Impact. Small amounts of hazardous materials would be used during construction activities for equipment maintenance (e.g., fuel and solvents). The use of hazardous materials would be limited to the construction phase and would comply with applicable local, state, and federal standards associated with the handling, transportation, and storage of hazardous materials. Hazardous materials would not be stored or used, such as for equipment maintenance, where they could affect nearby land uses. During construction, the existing system would be cleaned out and either disposed of or abandoned in place. If removed, the system would be removed and disposed of at an appropriate facility licensed to accept this type of waste.

The proposed intermittent sand filter system would not require the use of any hazardous substances. The system would result in wastewater low in contaminants

¹⁸ California Water Quality Control Board, “GeoTracker,” accessed July 17, 2019, <https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Sacramento>.

¹⁹ California Department of Toxic Substance Control, “EnviroStor Database,” 2014, https://www.envirostor.dtsc.ca.gov/public/map/?global_id=80000694.

of concern relative to comparable systems²⁰ and would undergo regular maintenance to ensure the system is in good working order. Transportation of waste materials to an off-site disposal area would be conducted by a licensed professional approved by the District.

The project may indirectly result in the use of hazardous household materials such as cleaning supplies, electronics, etc. This would not pose a hazard to the environment or the public because it would create little change from baseline conditions, where similar materials are used throughout the community.

In conclusion, minor quantities of fuels and solvents may be used to power construction equipment during the short construction period. This would occur in compliance with all applicable regulations and no materials would be stored where they may pose a hazard to nearby residences. The wastewater treatment system would not use hazardous materials, and all waste generated by the system would be handled and disposed of by a licensed professional approved by the District. Accordingly, the project would not create a significant hazard to the public or the environment through the routine use, transport, or disposal of hazardous materials; and a less-than-significant impact would occur.

b) *Would the project 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?*

Less-than-Significant Impact. As discussed in greater detail in response to impact an above, small quantities of hazardous materials would be used during construction to maintain and power equipment. These materials would be handled by a licensed contractor who routinely works with such substances and is familiar with applicable laws and regulations. Substances would not be stored where they could have a significant adverse impact on adjacent land uses.

The proposed wastewater system has been designed to minimize the likelihood of accidental releases into the environment. The system, which requires a variance from the Water District's setback criteria from nearby waterbodies, would be watertight, pre-treat effluent, and used raised bed dispersal fields. These qualities would decrease contaminant concentrations in system byproducts and maintain an adequate margin of safety between the system and sensitive environmental resources such as groundwater.

The site is zoned for residential use and is within a residential neighborhood, so future uses enabled by the wastewater treatment system would be residential and would not introduce a significant hazard to the public or the environment.

²⁰ *Stinson Beach County Water District, "Memorandum to Committee."*[Dec 4th, 2017}

In summary, the project would not pose a significant hazard during construction, operation, or the foreseeable future due to the project's design and nature. The project would therefore not 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. Impacts would be less than significant.

- c) ***Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?***

No Impact. There are no existing or proposed schools within one-quarter mile of the project site. The nearest school is Stinson Beach School, which is roughly one mile north of the project site. As such, the project would not emit hazardous emissions or handle hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school, and no impact would occur.

- d) ***Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?***

No Impact. The project site is not located on a site listed pursuant to Government Code Section 65962.5. The nearest site included on the Cortese List is approximately 0.27 miles east. As such, the project would not create a significant hazard to the public or the environment due to location on a site included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5, and no impact would occur.

- 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 proposed Project result in a safety hazard or excessive noise for people residing or working in the proposed Project area?***

No Impact. The project site is not near a public-use airport or private airstrip, nor is it within an airport land use plan. The nearest aviation facility is a private heliport over 7 miles east of the project site. As such, the project would not expose people living near a public airport or private airstrip to excessive noise. No impact would occur.

- f) ***Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***

Less-than-Significant Impact. The project would not lead to any long-term changes in emergency response or evacuation. The project would introduce new infrastructure within a privately-owned parcel, and would not impede any roadways or public rights of way important for emergency response. There would be increased vehicular demand along Calle del Onda and Highway 1 for construction and system maintenance, and potentially in the future for construction and use of a single-family residence. Given the small scope of the project and the potential for increased roadway demand, this would not be sufficient to result in inadequate emergency

access. As the project would not alter roadways or lead to substantially increased traffic, the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and a less-than-significant impact would occur.

g) *Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires?*

Less-than-Significant Impact. The project site is located in a relatively flat coastal area with winds that mostly blow off of the Pacific Ocean from the west to the east. The project site is on the western terminus of Calle del Onda and is partially located on the beach. A house previously situated on the property burned down in the 1980s. Given the direction of prevailing winds and the proximity of adjacent residences and very high fire hazard severity zones, a fire on the project site would potentially pose a risk of spread.

The presence of a functional wastewater system on-site would not exacerbate existing fire risk, as the system would predominately be subgrade and gravity-powered, creating few potential sources of sparks or fuel. During construction, the presence and use of motorized equipment would lead to a temporary, minimal increase in on-site fire risk. Given the short duration of construction and the small scope of construction activity, this risk would be less-than-significant.

The project would indirectly lead to increased human presence on-site through future maintenance activities and through potential future projects. This could lead to a small increase in fire risk, but this would be in-line with existing fire risk in the pre-existing residential neighborhood with extensive human activity, presenting a minimal increase in baseline wildfire risk.

As the project would only minimally increase on-site fire risk, the project would not exacerbate wildfire risk and expose people or structures to a significant risk of loss, injury or death involving wildland fires. A less-than-significant impact would occur.

4.10 HYDROLOGY AND WATER QUALITY — Would the proposed Project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed Project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) 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) Result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

Water bodies near the project site include the Pacific Ocean and Easkoot Creek. Both water bodies are under 300 feet from the project site. The project site is within the jurisdiction of the San Francisco Regional Water Quality Control Board (SF Water Board) and the District, both of which have regulatory authority over water quality within the project site.

Discussion of Impacts

- a) ***Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?***

Less-than-Significant Impact with Mitigation Incorporated. The proposed wastewater system has been designed to avoid impacts to water quality. Design features intended to protect water quality include raised bed dispersal fields, an intermittent sand filter pretreatment unit, and the use of watertight tanks. Raised bed dispersal fields would increase separation between the wastewater system and seasonal high groundwater. An intermittent sand filter pretreatment unit would reduce wastewater strength, and has been shown to result in effluents with 40-98% lower concentrations of contaminants of concern.²¹ The District requires all tanks to be watertight and implements water tightness tests on systems within its jurisdiction. This assures no leakage into nearby groundwater or surface water.

The system would also not result in a significant effect on water quality due to its short-term construction impacts or indirect growth-inducing impacts. Mitigation Measure HYDRO-1 prohibits construction during wet conditions, minimizing the likelihood of an adverse water quality impact related to construction. Future site development would not introduce any substantial pollutant sources to the site, and would be consistent with nearby development in its small scope and residential nature. Accordingly, the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, and impacts would be less than significant with mitigation incorporated.

Mitigation Measure HYDRO-1

No construction shall be permitted under wet weather conditions. Construction should be scheduled to occur in the dry season, between May and October, if feasible. Should construction need to extend into the wet season, the Contractor shall implement best management to minimize the likelihood of spillage into surface or groundwater. These include:

- Grading and excavation work shall occur during dry weather;
- All denuded areas shall be stabilized through installation of temporary erosion controls such as erosion control fabric or bonded fiber matrix. These controls shall be maintained until vegetation is established;
- Sediment shall be prevented from migrating off-site and storm drain inlets shall be protected by installing and maintaining appropriate measures such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.; and

²¹ *Stinson Beach County Water District.*

- Stockpiled landscaping materials shall be protected from wind and rain through storage under tarps.

b) *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the proposed project may impede sustainable groundwater management of the basin?*

Less-than-Significant Impact. Water in Stinson Beach is primarily sourced from groundwater, so while the project would not interfere with groundwater recharge, any water use associated with the project would pull from groundwater sources. As discussed in greater detail in Section 4.19, Utilities and Service Systems, development of the project site is accounted for in Stinson Beach's population growth estimates, including estimates used to determine the District's groundwater supply needs.

c.i) *Would the project 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 result in substantial erosion or siltation on- or off-site?*

Less-than-Significant Impact. The project would require the removal of ice plant mats throughout the project site. Denuding the project site would increase the rate of erosion by exposing bare soils to erosive forces such waves during high water events. The disturbed area is setback over 75 feet from the mean high water line, so high water events with the potential to exert erosive forces on the project site are relatively rare. Such events would become more frequent, however, as sea levels rise.

The project is conservatively assumed to have a useful life of approximately 50 years. Using sea-level rise predictions approved by the California Coastal Commission, sea levels are estimated to rise by as much as 2.5 feet in the coming 50 years. Noble Consultants performed a sea-level rise analysis for the project, estimating that accounting for sea-level rise, the shoreline would recede up to 80 feet in 50 years. Given the already high rate of coastal erosion anticipated to occur in the coming decades, the project's incremental contribution to coastal erosion resulting from vegetation removal within the project site would be negligible. Further, coastal erosion would not degrade the system in a manner which could affect the nearby environment, as the project includes a subgrade retaining wall designed to withstand wave run-up forces and protect the system from erosion.

As the project is designed to withstand erosive forces and would have a minimal contribution to coastal erosion, the project would not lead to substantial erosion or siltation on- or off-site. Furthermore, during construction, the Contractor would implement the erosion control measures described in the Project Description, minimizing the potential for short-term erosion impacts. Thus, a less-than-significant impact would occur.

- c.ii) *Would the project 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site?***

Less-than-Significant Impact. Following installation, the proposed wastewater system would be covered with native soil, leading to no alterations to storm drainage systems or to the number of impervious surfaces within the project site. In the long-term, existence of a functional wastewater system may facilitate future development of the site. This could lead to an increase in the quantity of on-site impervious surfaces. Any such development would be confined to 1,400 sq ft, and due to its small size would not likely lead to an alteration in drainage patterns which would result in increase on- or off-site flooding. Thus, the project would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site, and a less-than-significant impact would occur.

- c.iii) *Would the project 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 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?***

Less than Significant with Mitigation Incorporated. Project construction would have the potential to create polluted sources of runoff due to the presence of fuels and solvents on the site. Mitigation Measure HYDRO-1 prohibits construction work under wet conditions, minimizing the likelihood of construction, creating polluted runoff.

The wastewater system would be watertight and would have to pass water tightness tests implemented by a District inspector. As such, the wastewater system would not come into contact with surface water and would not create additional sources of polluted runoff. Future on-site development would be consistent with the project site's surroundings, and would, therefore, present little change in surface water pollution and would not exceed the capacity of stormwater drainage systems. As such, a less-than-significant impact would occur.

Mitigation Measure HYDRO-1

Please see above.

d) ***In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?***

Less-than-Significant Impact. The project site is in an area at risk of flooding and tsunami due to its close proximity to the Pacific Ocean and the San Andreas Fault. Upon inundation of the wastewater system, pollutants may be released. However, the system includes watertight tanks that would be regularly maintained and inspected. The wastewater system would be the primary potential source of pollution upon project site inundation due to the short duration of construction and the limited scope of pollutants that would be present during construction, as well as due to potential future site development's residential nature and lack of polluting uses.

Should the wastewater system be inundated and release pollutants, it would do so in small quantities relative to the amount of pollution that would be released during a flood or tsunami event, making a negligible contribution to pollutant concentrations. This is particularly true due to the system's inclusion of pre-treatment that would reduce effluent strength. In addition, proposed project would be designed and constructed consistent with the most current version of the California Building Code, which includes specifications and design criteria, minimizing the likelihood of ongoing pollutant release in the event of a disaster. Thus, the project would not risk release of pollutants due to project inundation due to flood, tsunami, and seiche, and impacts would be less than significant.

4.13 LAND USE AND PLANNING – Would the project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 impact?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The project site is located in unincorporated Marin County in the community of Stinson Beach. Stinson Beach is a low-density residential community alongside the Pacific Ocean. Applicable land use plans include the Marin Countywide Plan, the Marin County Local Coastal Plan, and the Stinson Beach Community Plan. An overview of each plan and its relevant goals and policies are discussed below.

Marin Countywide Plan

The Marin Countywide Plan is the primary plan governing land-use decisions in the unincorporated County, including the project site. The Countywide Plan’s primary goals include minimizing the use of finite resources, using all resources efficiently and effectively, reducing use and release of hazardous materials, reducing greenhouse gas emissions, preserving natural assets, and supporting public health, safety, and social justice. The countywide plan was adopted in 2007 and contains three broad elements, the Natural Systems and Agriculture Element, the Built Environment Element, and the Socioeconomic Element. Analysis of the project’s potential impacts on land use is primarily focused on potential conflicts with the Built Environment Element. Policies and goals relevant to biological resources, greenhouse gases, hydrology and water quality, and other CEQA Appendix G topics are considered in their respective chapters where relevant.

Relevant policies pertinent to land use include:

- CD.1-e. Protect Open Lands in the Coastal Corridor. Work with individual landowners; local, State, and federal agencies; and non-governmental organizations to preserve the rural character, agriculture, and open lands, and protect existing communities and recreational opportunities, in the Coastal Corridor.
- DES-3.1 Promote Infill. Encourage the development of vacant and underutilized parcels consistent with neighborhood character.

Marin Local Coastal Plan

The project site is part of Unit 1 of the Marin Local Coastal Program. The Marin Local Coastal Program outlines land use plans and policies in the coastal zone and locally administers the California Coastal Act. Primary objectives include maintaining compatible land uses, protecting biological resources, and protecting public access. Policies pertinent to other resources areas, such as the protection of biological resources, are discussed in the appropriate chapters of this Initial Study. Policies from the Marin Local Coastal Program relevant Land Use and applicable to the project are listed below:

- Public Access 3. Where evidence of prescriptive rights (historic public use) on a project site is determined to exist as a result of permit application review, public easements to protect the types, intensity, and areas of historic use shall be established as a condition of project approval. Development may be allowed in an area which has been historically used by the public for vertical access to the beach only when equivalent access which will accommodate the same types of intensity of use has have [sic] existed on the subject site, has been assured in the same vicinity.
- Public Access 9. Adequate public access to Stinson Beach currently exists across Federal park lands, County land at Calle Del Sierra, and private land at the Calles and Walla Vista. To encourage the continuance of access availability in these areas the County shall post the existing pedestrian access easements along Calle Del Arroyo. However, should the current levels of usage be jeopardized in the future, the County shall open and maintain at least two additional pedestrian access easements on Calle Del Arroyo. One of these will be at Walla Vista; the other would be situated where appropriate in the Calles. On street parking along the northerly side of Calle Del Arroyo shall continue to be available for day-use beach access.
- Public Services 7. All septic systems within the Coastal Zone shall conform with the Minimum Guidelines, for the Control of Individual Wastewater Treatment and Disposal Systems adopted by the Regional Water Quality Control Board on April 17, 1979. No waivers shall be permitted except where a public entity has formally assumed responsibility for inspecting, monitoring, and enforcing the maintenance of the system in accordance with criteria adopted by the Regional Water Quality Control Board, or where such waivers have otherwise been reviewed and approved under standards established by the Regional Water Quality Control Board.
- Public Services 8. Alternate waste disposal systems shall be approved only where a public entity has formally assumed responsibility for inspecting, monitoring, and enforcing the maintenance of the system in accordance with criteria adopted by the Regional Water Quality Control Board.

- Public Services 10. In order to minimize the generation of wastewater and to encourage the conservation of Coastal water resources, the use of water-saving devices shall be required in all new developments.
- Visual Resources 21. Existing development standards and the design review ordinance (Chapter 22.52) shall continue to be enforced. The following explicit standards shall apply to selected areas and projects:
 - All new construction in Bolinas, Stinson Beach, and Muir Beach shall be limited to a maximum height of twenty-five (25) feet; except that in the Highlands neighborhood of Stinson Beach, the maximum height shall be seventeen (17) feet, and in the Seadrift section of Stinson Beach, the maximum height shall not exceed fifteen (15) feet.
 - To the maximum extent feasible, new development shall not impair or obstruct an existing view of the ocean, Bolinas Lagoon, or the national or State parklands from Highway 1 or Panoramic Highway.

Stinson Beach Community Plan

The Stinson Beach Community Plan was most recently updated by the Marin County Planning Department in 1985. At that time, the Plan was intended to guide community development efforts and priorities, and some of its policies remain relevant today. Policies potentially relevant to the proposed project are listed below:

- Land Use F. ...The following design standards should be observed for new construction:
 - 1. New or replacement structure should, insofar as possible, be located on the ocean side of Easkoot Creek
 - 2. Maintain Easkoot Creek and the vegetation along its banks
 - 3. Provide access only off the Calles to Highway #1; create no new or additional vehicular access points directly on to the Highway
 - Maintain the maximum height for buildings throughout Stinson Beach at 25 feet, except in the Highways where 17 feet is appropriate and in Seadrift where the height limit specified in the subdivision C.C. and RS and the Local Coastal Plan shall be maintained.

Discussion of Impacts

a) ***Would the project physically divide an established community?***

No Impact. The project site is on a vacant parcel at the end of the street within an existing residential community. The parcel previously contained a single-family residence but has sat vacant since the home burned down in the mid-1980s. The project would replace the existing on-site septic system and would primarily consist of the introduction of sub-grade infrastructure. The septic system would facilitate future residential development of the site, which would be confined to the parcel and would not introduce any barriers to movement that would divide the established community. As the project would re-build subgrade residential-serving infrastructure that may serve future single-family development in a residential community and development would be confined to the Applicant's parcel, the project would not physically divide an established community, and no impact would occur.

b) ***Would the project 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 impact?***

No Impact. The project is under the jurisdiction of the Marin Countywide Plan, the Marin Local Coastal Program, and the Stinson Beach Community Plan. These plans outline policies guiding land-use patterns and protecting natural resources in the unincorporated county, the Marin coastal zone, and the Stinson Beach community, respectively. Relevant policies from these plans pertinent to land use are outlined above, and generally include policies protecting public access to Stinson Beach, the rural/residential character of the Stinson Beach community, guiding safe wastewater system development, and encouraging infill development.

The project would introduce a new septic system compliant with all applicable design guidelines. The system has been designed to accommodate flooding, sea-level rise, poorly percolating soils, and other constraints addressed by applicable land use plans and policies. The septic system may facilitate future residential development of the site, which would be required to comply with Marin County zoning principles and would constitute infill development by re-introducing housing to a vacant parcel in a residential area. As no conflicts were identified between the proposed project and applicable land use plans, policies, and regulations, no impact would occur.

4.12 MINERAL RESOURCES — Would the project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

According to the Marin Countywide Plan, mineral resource extraction in Marin is focused on producing rock, stone, sand, silica, and other construction materials. There are only three active mines within Marin County listed on the California Department of Conservation Division of Mine Reclamation’s website²². These mines include the Redwood/Silveira Quarry, Nicasio Rock Quarry, and Dutra Materials. Eight sites in Marin County have been designated by the State as having significant mineral resources for the North Bay region²³, containing deposits that qualify as marketable commodities by meeting a threshold value based on gross sales price, and an additional four resource sites have been permitted by the County of Marin.

None of the above mines or sites are within the vicinity of the project site. The proposed project is located within a residentially zoned community along Stinson Beach. There are no known mineral resources within or near the project site.

Discussion of Impacts

a) *Would the project 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?*

No Impact. The project site is not located within the vicinity of any mine or permitted mineral resource site within Marin County and no other known mineral resource areas are near the project site. Furthermore, the development of the proposed project would not preclude future excavation of oil or minerals should such resources be found. Therefore, the project would not result in the loss of availability of a mineral resource that would be of value to the region and the residents of the state.

²² Division of Mine Reclamation, California Department of Conservation website Available at: <http://maps.conservation.ca.gov/mol/index.html> Accessed: October 22, 2018

²³ Marin Countywide Plan, November 6, 2007

b) *Would the project 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?*

No Impact. The project site is not in or adjacent to any important mineral resource areas. There are no known mineral resources on the project site as delineated in the Marin Countywide Plan. Therefore, the proposed project would have no impact on mineral resources.

4.13 NOISE — Would the proposed Project result in:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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 of public use airport, would the proposed Project expose people residing or working in the proposed Project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

Sound is described in terms of loudness and pitch. The standard unit of loudness is the decibel (dB). Since the human ear is not equally sensitive to a given sound level at all pitches, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by accounting for pitch in a manner approximating the sensitivity of the human ear.

Noise levels from a particular source generally decline as distance to the receptor increases. Other factors, such as the weather and reflecting or barriers, also help intensify or reduce the noise level at any given location. Noise from stationary or point sources is reduced by about 6 to dBA for every doubling of distance from source to receptor. Noise levels are also generally reduced by 1 dBA for each 1,000 feet of distance due to air absorption. Noise levels may also be reduced by intervening structures – generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The normal noise attenuation within residential structures with open windows is about 17 dBA, while the noise attenuation with closed windows is about 25 dBA.²⁴

²⁴ National Cooperative Highway Research Program Report 117, *Highway Noise: A Design Guide for Highway Engineers*, 1971.

According to the Marin Countywide Plan, vehicular traffic is a major noise source in Marin County. This is particularly true along highways and major arterials such as Highway 1, which is located just east of the project site. Noise measurements taken along Highway 1 just north of Stinson Beach estimated roadways noise to be approximately 61 dB, averaged over a 24-hour period.

The Marin County Municipal Code designates allowable noise levels during construction and normal project operation. Per the Municipal Code, construction is permitted Monday through Friday 7 am to 6 pm and Saturday 9 am to 5 pm. Noise-generating construction activity is prohibited on Sundays and holidays. Loud equipment such as backhoes, generators, and jackhammers are only permitted from 8 am to 5 pm Monday through Friday. Limitations to these rules apply, however, for projects of another public agency or utility.

Discussion of Impacts

- a) ***Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?***

Less than Significant with Mitigation Incorporated. Construction activities would generate temporary noise from equipment use, the most common noise generated would be from mobile equipment such as excavators and trucks. Construction would only occur during daytime hours Monday through Friday, consistent with the Marin County Municipal Code. Construction would occur within a small area over a limited period of time, so use of this equipment would be limited.

The operational system would generate little if any, noise. The system would primarily operate using gravity but would be outfitted with electrical pumps for emergency shut-off during high water events. Pumps would operate intermittently and would not generate substantial quantities of noise. System maintenance would require occasional equipment use and vehicle trips to the site, but this would also be sporadic and would not create a substantial noise increase. As such, the wastewater system would not lead to a substantial noise increase in the project vicinity.

The project could indirectly lead to a long-term increase in noise associated with residential use (landscaping noise, car noise, etc.). This would be consistent with the existing noise environment in the vicinity of the project site and would not constitute a substantial noise increase.

Although the project would not result in a substantial increase in ambient noise in the immediate-, short-, or long-term, proximity to sensitive land uses (i.e. adjacent residences) create the potential to expose people to noise in excess of established standards. This is particularly true during construction, the only time during which project-related noise would be of a different nature than the existing noise environment. Mitigation Measure NOISE-1 requires the contractor to implement best management practices for noise reduction during construction. With the implementation of these measures, the project would not result in a substantial temporary or permanent noise increase in excess of applicable standards. Impacts would, therefore, be less than significant with mitigation incorporated.

Mitigation Measure NOISE-1

The Contractor shall implement the following best management practices for noise reduction throughout project construction:

- Construction hours shall be clearly posted on a sign at the entrance to the project site at least 48 hours prior to the commencement of construction activities;
- The District or the Contractor shall be responsible for responding to any noise complaints. Contact information for representatives of both parties shall be posted on the construction site;
- All construction equipment used on-site shall be muffled and maintained in good working order. All internal combustion engine-driven equipment shall be fitted with mufflers in good condition; and
- Unnecessary idling of internal combustion engines shall be prohibited and all equipment shall be turned off when not in use.

b) *Would the project result in generation of excessive groundborne noise or vibration levels?*

No Impact. Ground-borne vibration is typically associated with blasting operations, the use of pile drivers, and large-scale demolition activities, none of which are proposed for the construction or operation of the project. As such, no excessive ground-borne vibrations would be generated by the proposed project and no impact would occur.

- 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 of public use airport, would the proposed project expose people residing or working in the proposed project area to excessive noise levels?***

No Impact. The project site is not near a public use airport or private airstrip, nor is it within an airport land use plan. The nearest aviation facility is a private heliport over 7 miles east of the project site. As such, the project would not expose people living near a public airport or private airstrip to excessive noise. No impact would occur.

4.14 POPULATION AND HOUSING — Would the proposed Project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is a vacant lot within a residential community of Stinson Beach. There was previously a single-family home on the site, which has sat vacant since the house burned down in the 1980s. The Marin Countywide Plan and Marin County Zoning ordinance both designate the project site for coastal residential use.

Discussion of Impacts

- 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)?***

Less-than-Significant Impact. The project would involve approval of two Watercourses and Water Bodies variance requests for construction of a wastewater treatment system. Construction of the wastewater system would not displace any existing housing, as there is no housing currently present on the project site. The wastewater system would not directly cause any population growth but could indirectly lead to eventual residential development of a single-family home up to 1,400 sq ft in size. Given the small size of any potential future development on the site, any population growth indirectly resulting from the project could not be considered substantial. Approximately 2.5 individuals would be expected to live on the property should a home eventually be built²⁵. An increase of this amount would not be considered substantial. Furthermore, the project site previously contained a single-family residence and is located within a residential neighborhood, so development of the site would not require construction of any new growth-inducing infrastructure such as roads or utility lines, apart from minor additions to existing infrastructure that would connect a future single-family residence to the existing infrastructure.

²⁵ U.S. Census Bureau; 2010 Census Summary File 1; Tables P1 and QT-P1; generated by Jonathan Hidalgo; using American FactFinder; <<http://factfinder.census.gov>>; (29 November 2019).

At most, the project allows for future development of one home on a currently vacant lot. This type of action is not sufficient in scope to induce substantial population growth and would not necessitate the construction of new, growth-inducing infrastructure. Furthermore, the project would promote infill development on a residential site that previously contained housing—consistent with population and land use patterns promoted by the Stinson Beach Community Plan. Accordingly, the project would not induce substantial unplanned population growth, as the development of the project site was included within existing planning efforts. There would be a less-than-significant impact would occur.

b) *Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?*

No Impact. Approval and construction of a replacement wastewater system would not necessitate removal or displacement of any existing people or housing, nor would eventual construction of a house on project site. The project site once had a house present, but the house burned down in the 1980s and the lot has sat vacant ever since. As there is no structure currently present on the project site (apart from the remnants of a burnt chimney), the project would not displace substantial numbers of housing or people or necessitate the construction of replacement housing elsewhere, and no impact would occur.

4.15 PUBLIC SERVICES — Would the project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</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:				
i. Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii. Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii. Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv. Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
v. Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The project site is in the unincorporated community of Stinson Beach in Western Marin County. Police protection for the unincorporated county, including Stinson Beach, is provided by the Marin County Sheriff's Department. Fire protection services are provided by Calfire. The Stinson Beach Community is served by the Bolinas-Stinson Union School District for kindergarten through 8th grade and Tamalpais Union High School District for high school. Nearby parks include the Golden Gate National Recreation Area, a large park complex which includes Stinson Beach and is administered by the National Park Service.

Discussion of Impact

a-i. – a.v.) Would the project 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 fire protection, police protection, schools, parks, or other public facilities?

Less-than-Significant Impact. The project involves approval and construction of a replacement wastewater disposal system on a vacant parcel in Stinson Beach. This would not directly lead to an increased demand for fire protection, police protection, schools, parks, or other public facilities. There are no public service facilities located on the project site, so the project would not lead to the physical alteration of any such facilities. Further, construction of a wastewater treatment system would not directly lead to any population growth which would expand the need for public services; and although it could indirectly induce population growth, this would be limited to one single-family residence and would not be sufficient to necessitate the construction of new or expanded public service facilities. Similarly, although there could be increased fire or police protection needs during construction, construction would occur over a small geographic area and a short period of time, and any increase in demand would be insufficient as to require new or expanded public service facilities. Thus, the project would cause negligible increases in demand for public services and would not lead to adverse physical effects associated with the construction of new or expanded police, fire, school, park, or other public service facilities; and a less-than-significant impact would occur.

4.16 RECREATION — Would the project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The project site partially sits on a portion of Upton Beach, a publicly accessible beach administered by Marin County which is used for recreational purposes such as picnicking, kayaking, hang gliding, and dog walking. Stinson Beach is just south of Upton Beach and the project site. Stinson Beach is part of the Golden Gate National Recreation Area and is administered by the National Park Service. Stinson Beach is primarily accessed by visitors from a large parking lot south of the project site, but some access is provided from Calle del Onda; and according to the Marin County Local Coastal Program, prescriptive access rights to Stinson Beach may exist along the Calles.

Discussion of Impacts

- a) ***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?***

Less-than-Significant Impact. Approval and construction of a replacement wastewater system on the vacant parcel at 21 Calle del Onda would not directly lead to any population growth which might increase use of or demand for regional parks or recreational facilities. The project may indirectly increase the Stinson Beach Community's population by creating the possibility of future residential development on the site. While the specifics of such development are not yet known, any future development would be for a single-family home with 1,400 sq ft or less of habitable space. While it is probable that inhabitants of a future home on the site would use recreational facilities such as Upton and Stinson Beaches, the small number of people that could occupy this home would not increase demand to a degree that would lead to their physical deterioration.

In summary, in the short- and medium-term, the project would not lead to an increase in demand for or use of recreational facilities. In the long-term, the project could indirectly lead to a slight population increase which would have negligible effects on use of and demand for recreational facilities. Thus, the project would not lead to a substantial increase in use or demand for recreational facilities which would lead to their physical deterioration or necessitate the construction of new, expanded, or replaced facilities; and a less-than-significant impact would occur.

b) *Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*

Less-than-Significant Impact. According to the Marin Local Coastal Program, Calle del Onda is used to access Upton and Stinson Beaches and the public may have prescriptive access rights to the Calles. Approval and installation of a wastewater system on the vacant lot at the end of Calle del Onda would not impede the public's ability to access Stinson Beach through Calle del Onda, nor would potential future residential development of the site, as the public would retain access through the street. Similarly, construction equipment would be staged within the vacant lot and would not impede use of Calle del Onda for beach access. Accordingly, recreational access would not be affected and new access points would not need to be constructed.

In the short- and medium-term, the construction and presence of a replacement wastewater system would not increase recreational demand, as no population growth would result. In the long-term, the project may indirectly induce population growth. Any such population growth would be limited to the inhabitants of one single-family home, which would not create sufficient recreational demand to require the construction or expansion of any new facilities.

In conclusion, the project would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment, and a less-than-significant impact would occur.

4.17 TRANSPORTATION — Would the proposed Project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Environmental Setting

The project site is located on Calle del Onda, a small local road that dead-ends at Upton Beach adjacent to the proposed project site. Calle del Onda connects to State Highway 1, which runs along the western side of Marin County. State Highway 1 at this location is a two-lane road serving as the major arterial connecting the towns in the region.

Discussion of Impacts

a) *Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?*

Chapter 3.9 of the Marin Countywide Plan outlines the county’s goals and policies for transportation. Transportation policies from the Countywide Plan relevant to the project include policies geared towards the reduction of vehicle miles traveled and single-occupancy trips, to enhance bicycle and pedestrian infrastructure, and to maintain Western Marin’s rural character by enhancing bicycle and pedestrian infrastructure while not allowing for road widening that may accommodate more through traffic on Highway 1.

The project site is located on a local-serving road traffic just off of Highway 1. This stretch of Highway 1 is classified as a major arterial. The nearest transit facilities to the project site include a bus stop at the eastern terminus of Calle del Onda. There are no sidewalks or bicycle lanes intended for pedestrian or cyclist use in the vicinity of the project site. According to the Marin Countywide Plan, western Marin County is known for its rural character

There are few bicycle and pedestrian facilities in the vicinity of the project site. The project would not interfere with use of existing facilities or expansion of the system with

new facilities. The project would replace a wastewater disposal system within a private parcel at the end of Calle del Onda. This would introduce new subgrade infrastructure that would not impede on any sidewalks or bus stops or otherwise preclude the use of bicycle or pedestrian facilities. Indirect impacts related to the potential construction of a home on the site at a future date would similarly be confined to the private parcel and would not interfere with any plans for alternative transportation.

The Marin Countywide Plan calls for reduction in vehicle miles traveled and single-occupancy vehicle trips. The project would be slightly inconsistent with these goals and policies, as it would necessitate trips to and from the site during proposed project construction as well as following construction for system maintenance and inspection. Construction would occur over a short time period and would necessitate few trips, and maintenance would occur roughly once every six months, so these trips would together only create a minor inconsistency with the Marin Countywide Plan's transportation policies. Similarly, although the project could indirectly stimulate population growth in Western Marin, this would be of minor quantity, as future on-site development would be restricted to one single-family residence of no more than 1,400 sq ft of habitable space. The vehicle miles traveled associated with such a residence would only create minor inconsistencies with the Marin Countywide Plan.

In summary, the project would not conflict with any plan or policy on bicycle, transit, and pedestrian facilities, as it would not interfere with the use or expansion of any such facilities. The project would lead to minor increases in vehicle miles traveled, which would be inconsistent with the Marin Countywide Plan's transportation policies. However, increased vehicle trips directly and indirectly associated with the project would be minor in quantity due to the small nature of the project, and would therefore only present mild inconsistencies with applicable transportation plans. Thus, the project would not conflict with a program, plan, policy, or ordinance addressing the circulation system, and a less-than-significant impact would occur.

b) *Would the project conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?*

Less-than-Significant Impact. According to CEQA Guidelines Section 15064.3, Subdivision (b), a project's effects on automobile delay do not constitute significant environmental impacts. Instead, vehicle miles traveled is the most appropriate measure of the Project's impact on transportation; and projects that would reduce vehicle miles traveled in their vicinity should be considered to have a less-than-significant transportation impact.

As discussed in further detail in response to impact a) above, the project would lead to minor increases in vehicle miles traveled through construction of the proposed project, occasional system maintenance and inspection, and potential indirect population growth. These would all be minor due to the scope and nature of the project, which would introduce infrastructure intended to serve few people on a small parcel. As such, although the project would lead to some increase in vehicle miles traveled, this would be minor and would not substantially conflict with or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). Thus, a less-than-significant impact would occur.

c) *Would the project substantially increase hazards due to a geometric design feature or incompatible uses?*

Less-than-Significant Impact. The project would not physically modify any area roadways, and as such would not increase hazards due to a geometric design feature. The project would create traffic along Calle del Onda and Highway 1, including traffic associated with large construction and maintenance vehicles. Construction traffic would only use area roadways for the duration of the short construction period and maintenance traffic would only be present on occasion (roughly once every six months); and although construction and maintenance would require the use of large vehicles, few vehicles would be needed due to the small scope of the project. Furthermore, Highway 1 regularly accommodates large vehicles, as it is the primary arterial serving Western Marin County. As the project would not physically modify any roadways and would only sporadically introduce large vehicles to area roadways, the project would not substantially increase hazards due to a geometric design feature or incompatible uses, and a less-than-significant impact would occur.

d) ***Would the project result in inadequate emergency access?***

Less-than-Significant Impact. The project would not lead to any long-term changes in emergency access. The project would introduce new infrastructure within a privately-owned parcel, and would not impede any roadways or public rights of way important for emergency access. There would be increased vehicular demand along Calle del Onda and Highway 1 for construction and system maintenance, and potentially in the future for construction and use of a single-family residence. Given the small scope of the project and the potential for increased roadway demand, this would not be sufficient to result in inadequate emergency access. As the project would not alter roadways or lead to substantially increased traffic as to impede emergency access, the project would not result in inadequate emergency access, and a less-than-significant impact would occur.

4.18 TRIBAL CULTURAL RESOURCES — Would the project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) 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 size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) 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 Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

In July 2019, Origer conducted a cultural resources study for the project site. As part of their research, Origer contacted the California Native American Heritage Commission to request contact information for potentially interested Native American individuals and tribes and information from the Sacred Lands File for the project site. The Sacred Lands File for the site indicated that there are no known sacred lands within the project site. Search results for interested parties yielded contact information for one potentially interested tribe—Federated Indians of Graton Rancheria (FIGR). Origer sent FIGR a letter to notify them of the proposed project. On July 18, 2019, FIGR responded, requesting to be provided the results of Origer’s research. This contact does not constitute formal consultation pursuant to AB 52, but was intended to inform the Tribe of the project.

Discussion of Impacts

- a) ***Would the project 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 size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:***
- a-i) ***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)?***
- a-ii) ***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 Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?***

No Impact. During the cultural resources survey for the project site, Origer sent letters to FIGR to notify them of the project. The Native American Heritage Commission did not identify any other potentially interested tribal organizations or individuals. This does not constitute tribal consultation but assures that all known potentially interested tribal parties are aware of the project. No tribes have requested formal AB 52 consultation with the District.

According to Origer's cultural resources survey, the project site has low potential for buried remains due to the types and ages of soils present. Furthermore, excavation would occur in an area previously disturbed by the installation of a now-defunct home and septic system in the mid to late 1900s. In the unlikely event of accidental discovery of archaeological resources or human remains that may have tribal significance, the Contractor would be required to comply with State law, which calls for work stoppages and contact with a qualified archaeologist and/or the County coroner.

As the project site has low likelihood of buried tribal cultural resources, State law protects accidentally discovered resources, no tribes have requested AB 52 consultation, and all potentially interested tribes identified by the Native American Heritage Commission were notified of the project, the project would not affect any significant tribal resources pursuant to Public Resources Code sections 5020.1(k) or 5024.1 and no impact would occur.

4.19 UTILITIES AND SERVICE SYSTEMS — Would the proposed Project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the proposed Project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the proposed Project that it has adequate capacity to serve the proposed Project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is in the unincorporated community of Stinson Beach in western Marin County. The District provides water for the community and oversees on-site wastewater management. The District presently serves a population of approximately 2,000 people with a 0.7% annual growth rate. On community build-out, the District is expected to serve approximately 2,100 people. The District sources its water from groundwater wells supplemented by local creeks.²⁶

²⁶ "Stinson Beach County Water District - Stinson Beach County Water District Overview," accessed August 14, 2019, <http://stinson-beach-cwd.dst.ca.us/overview.html>.

The project site is located within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Water Board). The project site has existing utility lines, but their precise locations are unknown and they have not been used since the home occupying the site burned down in the mid-1980s. Non-hazardous solid waste from the project site would be disposed of at Redwood Landfill, which serves greater Marin County and has permitted capacity until 2024. Redwood Landfill is permitted to receive up to 2,300 tons per day²⁷

Discussion of Impacts

- a) ***Would the project 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?***

Less than Significant with Mitigation Incorporated. The project would not require the expansion, relocation, or construction of water, stormwater drainage, natural gas, or telecommunications facilities. The project would require the construction of new wastewater treatment facilities, which would result in less-than-significant impacts with implementation of the mitigation measures discussed throughout this Initial Study.

The new storm drain system would require electric power to pump wastewater into the system and shut the system off during high water events. This would require the construction of one 115 Volt single-phase power source and associated infrastructure. This system would be installed on the eastern side of the project site, set back from adjacent water bodies in an area absent special resources, hazards, and/or soil types that would facilitate the creation of a significant environmental impact. This power source would be connected to existing transmission lines, and would, therefore, be relatively localized. Due to its location and nature, construction of new electric power facilities would not cause significant environmental effects.

Existing utilities such as sewer and water lines are present within the site but their exact location is unknown. Depending on their location within the project site, waterlines may require relocation to protect the integrity of the area's water supply and avoid sewer and water crossings. Mitigation Measure UTILITIES-1 requires the contractor to determine the location of existing utilities prior to construction and to implement measures to avoid contact between the wastewater system and existing waterlines. With implementation of this measure, existing utility lines would continue to serve the community and the relocation or construction of new lines would not cause a significant environmental impact.

²⁷ CalRecycle, "SWIS Facility Detail: Redwood Landfill (21-AA-0001)," accessed August 14, 2019, <https://www2.calrecycle.ca.gov/SWFacilities/Directory/21-AA-0001/Detail>.

In summary, the project would not require the expansion, relocation, or construction of water, stormwater drainage, natural gas, or telecommunications facilities. With implementation of the mitigation measures discussed throughout this Initial Study, construction of a wastewater system would not result in significant environmental impacts. Mitigation Measure UTILITIES-1 would require the contractor to protect the integrity of existing water lines within the site by locating these lines and implementing avoidance and minimization measures to assure no water quality impacts would occur. Accordingly, the project would not result in a significant environmental impact associated with the relocation, expansion, or construction of water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities. Thus, impacts would be less than significant with mitigation incorporated.

Mitigation Measure UTILITIES-1

Prior to the start of ground disturbance, the Contractor shall determine the precise location of existing on-site utilities. If any water lines are located within ten feet of the proposed septic system, the Contract shall reroute the lines to a minimum distance of ten feet away. If a line may not be rerouted due to site constraints and water and sewer lines must cross, the Contractor shall install a PVC sleeve on both the water and the sewer line in question.

- b-c) *Would the project have sufficient water supplies available to serve the proposed project and reasonably foreseeable future development during normal, dry, and multiple dry years and result in a determination by the wastewater treatment provider which serves or may serve the proposed project that it has adequate capacity to serve the proposed project's projected demand in addition to the providers existing commitments?***

Less-than-Significant Impact. The project would be served by the District, which provides water supply services and on-site wastewater system oversight for the community of Stinson Beach. The District serves a population of approximately 600 full-time and 1,400 part-time residents for a total service population of approximately 2,000 people. Based on planned population growth per the community's zoning lot allowances, it is estimated that the District will eventually serve a population of approximately 2,100 residents. The project would not lead to any population growth in the immediate-term, but could eventually lead to as much population growth as can be accommodated by one home with a maximum habitable space of 1,400 sq ft. This is consistent with the project site's zoning, and would therefore not exceed projected population growth for the Stinson Beach Community. The District would therefore have adequate water supplies and oversight capacity to serve the project, and a less-than-significant impact would occur.

- d) ***Would the project 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?***

Less-than-Significant Impact. The project would require the removal or abandonment in place of the existing wastewater system. If removed, the system would be properly cleaned and disposed of at an appropriate landfill. Project operation would create wastewater but would not create any solid waste. Future population growth that could indirectly result from the project would be served by Redwood Landfill, which is permitted to receive up to 2,300 tons of solid waste per day. The on-site solid waste generation would be negligible relative to this quantity given the small scope of proposed and reasonably foreseeable development.

The Marin Countywide Plan includes policies and goals for solid waste reduction in Marin County, which generally call for the reduction of per-capita solid waste generation in the unincorporated county and increased landfill diversion rates. The project would lead to increased solid waste generation within the project site, mostly temporarily during construction. It could also indirectly lead to population growth, which would lead to solid waste generation. This population growth is accounted for in applicable planning documents and would not increase per-capita solid waste disposal rates, and would therefore not conflict with local waste reduction goals.

In summary, the project would not generate solid waste in excess of local infrastructure or impair attainment of solid waste reduction goals. Thus, a less-than-significant impact would occur.

- e) ***Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?***

No Impact. The project would comply with all applicable federal, state, and local waste management and reduction statutes and regulations, as is legally required. This includes the disposal of the existing system at an appropriate facility, as discussed in the project description. As the project would comply with general, state, and local management and reduction statutes and regulations related to solid waste, no impact would occur.

4.20 WILDFIRE — If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the proposed Project:	<i>Potentially Significant Impact</i>	<i>Less than Significant with Mitigation Incorporated</i>	<i>Less than Significant Impact</i>	<i>No Impact</i>
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Environmental Setting

The project site is classified by the California Department of Fire and Forestry (Calfire) as a moderate fire hazard severity zone. Areas surrounding the project site are also classified as moderate fire hazard severity, apart from the adjacent beach, which is classified as “urban unzoned”. Much of the land surrounding the community of Stinson Beach is undeveloped watershed and national parkland classified as high fire hazard severity. The nearest high fire hazard severity area is approximately 0.13 miles west of the project site. The project site and its surroundings are part of the state responsibility area. The project site is in a developed, beachside residential community with few available fuel sources in its immediate vicinity.

a) *Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*

Less-than-Significant Impact. The project site is situated in a moderate fire hazard severity zone and is close to very high fire hazard severity zones. In the event of a fire-related emergency, Highway 1 would be the primary means of getting to and from Stinson Beach for emergency responders and evacuees. Highway 1 accommodates one lane of traffic in each direction and runs through watershed and national parklands before converging with Highway 101 in Marin City.

The project would not introduce any structures or roadway changes which would impede access to or use of Highway 1 in the event of a wildfire emergency. The proposed project is a septic tank replacement, which itself would not introduce any new population growth which would add further traffic in the event of an emergency. The project, however, would be slightly growth-inducing because it would enable future residential development on the project site. Any future development of the site would be constrained to 1,400 square feet and would accommodate one single-family structure. Tentative plans for future residential development indicate that the home and associated parking would be within the parcel and off of Calle del Onda, so future development would not impede roadway access. Furthermore, the addition of one single-family residence to the end of the street would not add a substantial quantity of traffic during an emergency evaluation or response.

As the project would not directly or indirectly impede roadways or introduce a large number of new people to the area, it would not impede an emergency response or evacuation plan. Thus, a less-than-significant impact would occur.

b) *Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*

Less-than-Significant Impact. The project site is located in a relatively flat coastal area with winds that mostly blow off of the Pacific Ocean from the west to the east. The project site is on the western terminus of Calle del Onda and is partially located on the beach. A house previously situated on the property burned down in the 1980s. Given the direction of prevailing winds and the proximity of adjacent residences and very high fire hazard severity zones, a fire on the project site would potentially pose a risk of spread.

The presence of a functional wastewater system on-site would not exacerbate existing fire risk, as the system would predominately be subgrade and gravity-powered, creating few potential sources of sparks or fuel. During construction, the presence and use of motorized equipment would lead to a temporary, minimal increase in on-site fire risk. Given the short duration of construction and the small scope of construction activity, this risk would be less-than-significant.

The project would indirectly lead to increased human presence on-site through future maintenance activities and through potential future projects. This could lead to a small increase in fire risk, but this would be in-line with existing fire risk in the pre-existing residential neighborhood with extensive human activity, presenting a minimal increase in baseline wildfire risk.

As the project would only minimally increase on-site fire risk, the project would not exacerbate wildfire risk and expose project occupants to pollutants from a wildfire or the uncontrolled spread of a wildfire. A less-than-significant impact would occur.

- c) ***Would the project 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?***

Less-than-Significant Impact. The project would not require any associated infrastructure such as roads, fuel breaks, emergency water sources, power lines, or other utilities. The project would require installation of some sub-grade infrastructure to move water into the system and provide power for the system's pumps. As this infrastructure would be below ground, it would not exacerbate wildfire risk. It is possible that during construction and in the long-term the project could lead to increased on-site fire risk through increased human activity, but any such increase would be minimal relative to baseline levels due to the already extensive presence of human activity on the project site. Such an increase would therefore not require associated infrastructure intended to mitigate fire risk that could have temporary or ongoing environmental impacts. As the project does not require any associated infrastructure that would exacerbate fire risk or result in temporary or ongoing environmental impacts, a less-than-significant impact would occur.

- d) ***Would the project 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?***

No Impact. The project site is located in a low-lying, relatively flat area on Upton Beach. There are no downstream or downslope areas that would be at-risk of flooding or landslides due to runoff, post-fire slope instability, or drainage changes. Furthermore, the project would create little change in the existing risk of wildfire, as there is already extensive human presence in the area around the project site, which is an established residential community. As the project site would not alter the area's risk of flooding or landslides and there are no receiving people or structures downstream or downslope, the project would not expose people or structure to risks of flooding or landslides due to wildfire, and no impact would occur.

4.21 MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discussion

- a) ***Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?***

Less-than-Significant Impact. The analysis within this Initial Study demonstrates that the project would not have any potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal. The project site does not contain any resource listed in, or determined to be eligible by, the State Historical Resource Commission and does not contain a resource included in a local register of historic resources or identified as significant in a historical resource survey. Additionally, the project site does not contain any object, building, structure, site, area, place, record, or manuscript that a lead agency determined to be

historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

- b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

Less-than-Significant Impact. Cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. No currently ongoing projects in the vicinity of the project site with the potential for cumulative impacts with the proposed project were identified. CEQA requires analysis of cumulative impacts in light of “reasonably foreseeable” future projects. It is possible that the proposed project would be mildly growth-inducing and lead to the construction of one residence on the project site in the future. This possibility is examined throughout this initial study, and no cumulatively significant impacts were identified.

The analysis within this Initial Study demonstrates that the project would not have any individually limited, but cumulatively considerable impacts. Compliance with the conditions of approval issued for the proposed development would further assure that project-level impacts would not be cumulatively considerable. Consequently, the project along with other cumulative projects will create a less than significant cumulative impact with respect to all environmental issues.

- c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?**

Less-than-Significant with Mitigation Incorporated. With implementation of the various BMPs and mitigation measures included in the proposed project description and this Initial Study, the project would not result in substantial adverse effects on human beings, either directly or indirectly.

***Appendix A: WRA 2019
Biological Resource Report Update***

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October 2019

Ed Schmidt
3785 Shoreline Hwy,
Mountain View, California 94041

Re, Biological Site Assessment for 21 Calle del Onda, Stinson Beach, California

Mr. Schmidt,

The purpose of this letter report is to provide you with an updated Biological Site Assessment (BSA) for the residential lot located at 21 Calle del Onda within in the Calle Subdivision in Stinson Beach, Marin County, California, APN 195-162-49 (Parcel, Figure 1). The site visit was conducted on July 16, 2019 to update existing conditions following the previous BSA survey conducted on December 17, 2015.

The parcel contains the remains of a residence that was demolished after fire damage in the mid-1980's. The total size of the Parcel is 0.36 acre (15,681 square feet). The beachfront parcel is bounded by residential development on three sides including existing homes on the two adjacent beachfront parcels.

This report meets the requirements for a BSA as described in the Guide for the Preparation of Site Assessments (Marin County Community Development Agency, *No Date*) and in accordance with the policy requirements of the Marin Countywide Plan (Marin County 2007). The general objectives of a BSA are to:

- Determine whether there are any sensitive biological resources such as wetlands, streams, or habitats for special status species in proximity to a proposed project;
- To accurately map any biological constraints on a site plan for the project; and
- To determine whether a project would result in potentially significant adverse biological impacts pursuant to the California Environmental Quality Act (CEQA).

Sensitive biological resources include the following:

- Plants or animals that are listed as rare, threatened, or endangered or as a species of special concern, pursuant to Federal or State law, and habitat essential to special status species of wildlife;
- Natural communities indicated as rare or threatened by the California Natural Diversity Data Base of the California Department of Fish and Game;
- Within the Coastal Zone, beaches and sand dunes, wetlands, streams shown on USGS maps and the riparian vegetation surrounding them, or natural vegetation designated by the local coastal program as significant natural habitat; and
- Natural communities and associated buffers protected under the Marin Countywide Plan,

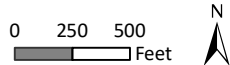


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Sources: National Geographic, WRA | Prepared By: njander, 7/31/2019

Figure 1. Project Site Regional Location Map

21 Calle del Onda Wastewater System Variance Request Project
Marin County, California



Project Description

The 21 Calle del Onda Wastewater System Variance Request Project (Project) is proposed to replace the existing wastewater system underlying the vacant lot at 21 Calle del Onda. The existing system was installed in 1985 and has not been used since a fire burned down the single-family residence served by the system in the mid-1980s. The Applicant proposes to replace the decades-old system with a 2,000 gallon septic tank, 2,000 gallon dual compartment sump tank, and sub-grade concrete retaining wall. The proposed septic tank would not immediately serve any development. A single-family residence with no more than 1,400 square feet of habitable space may eventually be constructed on the site, but is not proposed at this time. The details of such development would be determined at a later date.

Biological Site Assessment Methods

Prior to the site visit, background literature was reviewed to determine potential presence of sensitive vegetation types, aquatic communities, and special-status plant and wildlife species. Resources reviewed for sensitive vegetation communities and aquatic features include:

- Aerial photography (Google Earth);
- Bolinas USGS 7.5-minute quadrangle map (USGS 1971) and surrounding quadrangles;
- *The Soil Survey of Marin County* (USDA 1985);
- California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB) (2019a);
- CDFW California Wildlife Habitat Relationships System Online Life History Accounts and Range Maps (CDFW 2019b);
- CDFW's California Bird Species of Special Concern (Shuford and Gardali 2008);
- California Native Plant Society's (CNPS) Electronic Inventory (2019);
- Consortium of California Herbaria (CCH 2019);
- *Marin Flora* (Howell et al. 2007);
- U.S. Fish and Wildlife Service's National Wetland Inventory (NWI) (2009) map;
- San Francisco Estuary Institute's (SFEI) Bay Area Aquatic Resources Inventory (BAARI) (2019);
- Marin County Breeding Bird Atlas (Shuford 1993); and
- eBird online avian occurrence database (eBird 2019).

Biological resources policies within the certified Marin County Local Coastal Program (LCP, Marin County 2010), and the Marin Countywide Plan (CWP, Marin County 2010) were also reviewed.

On July 16, 2019, a WRA biologist traversed the Parcel on foot to evaluate the potential presence of sensitive biological resources as defined in the County LCP and CCC Statewide Interpretive Guidelines. All biological communities, including Environmental Sensitive Habitat Areas (ESHAs), were documented and any potential wetlands or non-wetland waters potentially jurisdictional by the California Coastal Commission (CCC) were noted. The Parcel was examined for coastal dunes and beach habitat, and indicators of wetlands, waters, and areas containing an ordinary high water mark (OHWM) using CCC methods and definitions. Site conditions were noted as they relate to habitat requirements of special-status plant and wildlife species known to occur in the vicinity as determined by the background literature research.

Plant species were identified with *Marin Flora* (Howell et al. 2007) and/or *The Jepson Manual, Second Edition* (Baldwin et al. 2012). All plant species were identified to a taxonomic level sufficient to determine rare status (CNPS 2019) and/or invasive status (Cal-IPC 2019).

Results

The Parcel is mapped as Dune Land and Beaches soil types by the Soil Survey of Marin County (USDA 1985). These soil types are composed of well sorted sands, are well drained with rapid runoff, and have rapid permeability, making wetland conditions very unlikely. Onsite conditions confirm the presence of sand substrate. During the assessment, two soil pits were dug to an approximate depth of 14-18 inches to look for indicators of wetland soils (Figure 2). Dune land soil profiles were observed at all soil pits. Based on field observations and analysis of aerial imagery, there are no indicators of wetlands present within the Parcel. No redoximorphic features which might indicate the presence of hydric soils and therefore wetlands were observed.

At Stinson Beach tidal waters within the jurisdiction of the U.S. Army Corps of Engineers occur at an elevation of 7.8 feet NAVD88. The western parcel boundary lies laterally more than 100 feet east of the jurisdictional high tide line and therefore lies outside of the U.S. Army Corps of Engineers (Corps) jurisdiction (L.A. Stevens and Associates 2015). No jurisdictional aquatic communities (wetlands or stream corridors) are present within or adjacent to the Parcel.

No sensitive plant or wildlife habitat types were identified within the Parcel. Eleven plant species were observed within the Parcel (Appendix A), of which six species are ranked by California Invasive Plant Council as having a “moderate” or “high” ranking status (Appendix B). Vegetation within the Parcel is dominated by invasive non-native plants reflecting its developed and disturbed condition. It is classified according to the CDFW Natural Communities List (CDFW 2019) as ice plant mats (*Carpobrotus edulis* Semi-natural Stands) and covers approximately 0.16 acre (see Appendix C). Ice plant, an introduced ornamental plant native to South Africa, is considered a CAL-IPC ranked “high” invasive plant and creates dense mats that over time allow new non-native plant species to establish. Ice plant propagates asexually and by seed, making this invasive plant difficult to control. Further, this invasive plant species provides little habitat value.

The remaining portion of the Parcel to the west meets the definition of sand beach habitat (0.20 acre, Figure 2) because it contains unvegetated and unconsolidated materials that are subject to wave action. Beaches are defined by the current LCP as an ESHA.

The California Coastal Act and the Marin County LCP define an ESHA as:

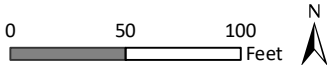
...any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.



Sources: Sonoma Veg 2013 Aerial, WRA | Prepared By: njander, 7/31/2019

Figure 2. Constraints Map

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Within the current and active Marin LCP, several policies address the protection of ESHA within the Coastal Zone:

- Land Use Plan Policy Code C-BIO-2 Section 4, ESHA Protection states that “development proposals within or adjacent to ESHA will be reviewed subject to a biological site assessment prepared by a qualified biologist hired by the County and paid for by the applicant. The purpose of the biological site assessment is to confirm the extent of the ESHA, document any site constraints and the presence of other sensitive biological resources, recommend buffers, development timing, mitigation measures including or precise required setbacks, provide a site restoration program where necessary, and provide other information, analysis and modifications appropriate to protect the resource.”
- Land Use Plan Policy Code C-BIO-7 Coast Dunes “prohibits development in coastal dunes to preserve dune formations, vegetation and wildlife habitats.”
- Land Use Plan Policy Code C-BIO-9 Stinson Beach Dune and Beach Areas prohibits “development that would adversely impact the natural sand dune formation and sandy beach habitat in the areas west of the paper street Mira Vista and the dry sand areas west of the Patios. Prohibit development west of Mira Vista, including erection of fences, signs, or other structures, to preserve the natural dune habitat values, vegetation and contours, as well as the natural sandy beach habitat.”

While the Marin County LCP defines buffers for wetlands and riparian habitats and designates allowable uses within these specific areas, the LCP does not define buffers for ESHA composed of beaches. For these undefined “other ESHA” areas, the Marin Land Use Plan requires development to be “set back a sufficient distance to minimize impacts on the habitat area.”

The sand beach habitat on the western portion of the Parcel contains no special-status plants or wildlife associated with the beach area. Wildlife species associated with the Parcel and the beach include only the common bird species that are prevalent throughout developed neighborhoods (see Special-Status Wildlife Species section below). Development of the beach area would not be a significant biological change as it is already regularly disturbed by foot traffic including pedestrians accessing the beach from Calle del Onda and through the Parcel itself, dogs utilizing the Parcel and the surrounding neighborhood and associate activities that regularly disturb the area. In addition, the past development and current use as a staging area for lifeguard stands and temporary structures largely diminish the use of the Parcel by wildlife and significantly lessen the ecological value as a natural habitat. Therefore, although the sand beach is defined as an ESHA by the LCP, further development on the beach would not pose a significant biological impact.

Natural dune systems are characterized by specific dune morphological characteristics which typically include foredunes, ridges, blowouts, parabolic dunes, hollows, and transverse dunes. These dune systems move with the forces of the wave and wind energy. Dunes are also colonized by vegetation adapted to dune habitats in vegetation patterns that are strongly correlated with the dune morphology. Dune vegetation includes dune grasses, annual and perennial herbaceous and slightly woody plants (Pickart and Sawyer 1988).

The non-native iceplant mat area is neither sand beach nor a “natural sand dune formation” as described in the LCP. The Parcel is disturbed by development and is isolated from other dune

habitats by surrounding development. The biological, ecological and physical features and functions of natural sand dune systems including sand movement and native dune vegetation are not present. Neither dune vegetation, nor physical characteristic of dunes are present and habitat for dune dependent wildlife species is not present. This in combination with the excessive foot traffic and other uses (e.g., use as a staging area for lifeguard stands and other temporary beach structures) preclude the formation of dunes and any ecological function as a natural dune.

Special-status Plant Species

One hundred special-status plant species have been documented from the Bolinas 7.5-minute quadrangle and surrounding USGS quadrangles (San Geronimo, Novato, Inverness, San Rafael, and Point Bonita, Figure 3). However, no special-status plant species were observed within the Parcel or its immediate surroundings during the site visit. Moreover, because of the level of disturbance, and lack of suitable habitat for the species listed, no special-status plants species were determined to have the potential to occur within the Parcel.

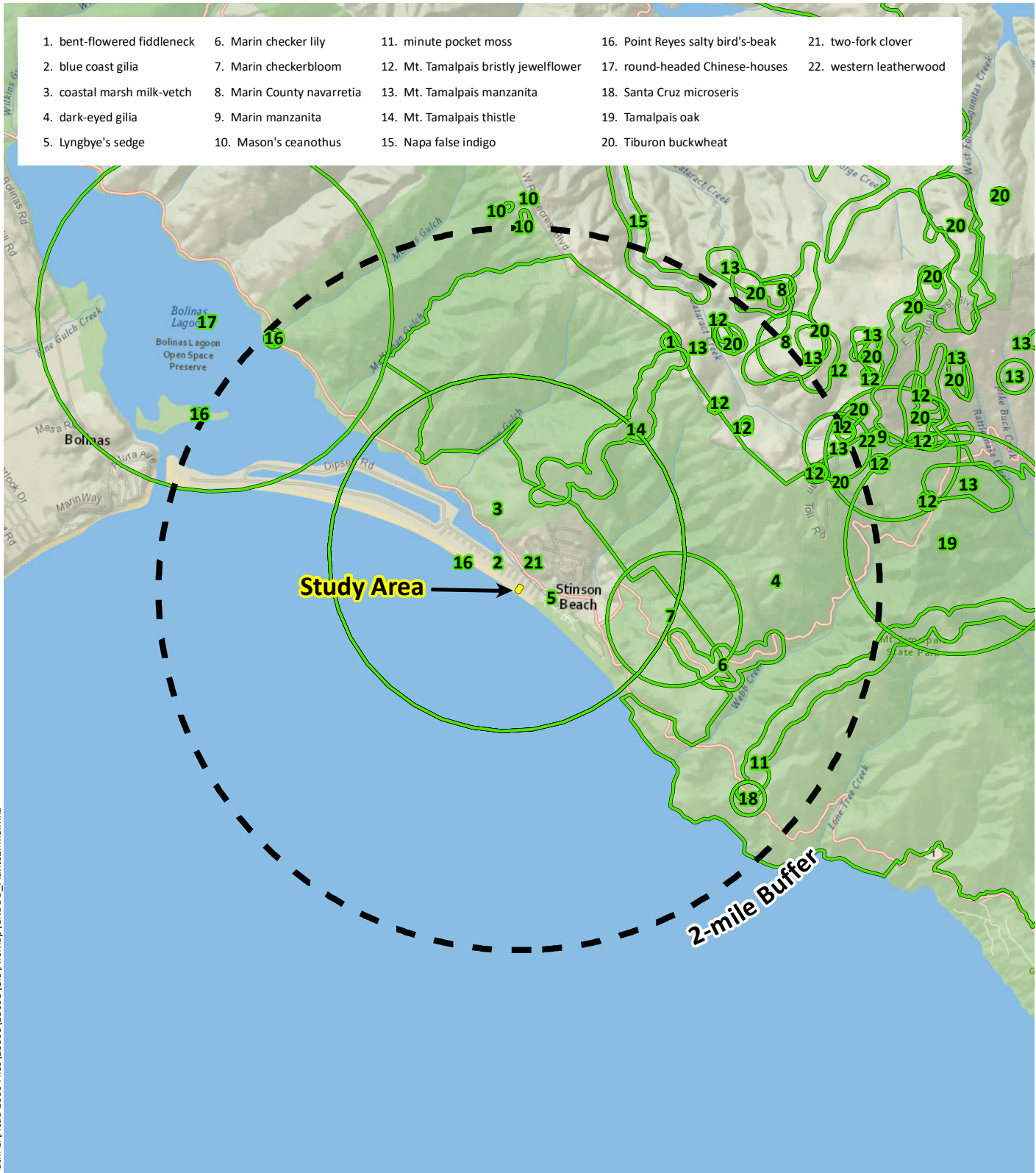
The 91 special-status plant species have no potential to occur within the Parcel due to one or more of the following reasons:

- Hydrologic conditions (e.g. vernal pool habitat, riverine) necessary to support the special-status plants do not exist on the Stinson Beach spit;
- Edaphic (soil) conditions (e.g. serpentine, volcanics, clay textures) necessary to support the special-status plants do not exist on the Stinson Beach spit;
- Topographic conditions (e.g. north-facing, mountainous) necessary to support the special-status plants do not exist on the Stinson Beach spit;
- Associated vegetation communities (e.g. chaparral, oak woodland) necessary to support the special-status plants do not exist on the Stinson Beach spit.

The relatively disturbed conditions in and around the Parcel make it unlikely that any special-status plant species are present. The loose sandy soil, history of disturbance in the majority of the Parcel, and relative isolation of being on a sand spit with surrounding development precludes the possibility of presence of special-status plant species. Therefore, no special-status plant species are expected to occur, and protocol-level rare plant surveys are not necessary. Appendix B summarizes the habitat requirements and the rationale for why they would not occur within the Parcel.

Special-Status Wildlife Species

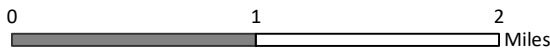
Eighty-four special-status wildlife species have been documented from the Bolinas 7.5-minute quadrangle and surrounding USGS quadrangles (San Geronimo, Novato, Inverness, San Rafael, and Point Bonita, Figure 4). Following the background literature review, all of these species have no potential or are unlikely to occur within the Parcel. The Parcel does not contain any aquatic habitats and thus precludes the presence of special-status fish, and many special-status invertebrates and herptiles. No trees, shrubs, or buildings occur within the Parcel, and thus the Parcel cannot support nesting special-status birds or roosting bats.

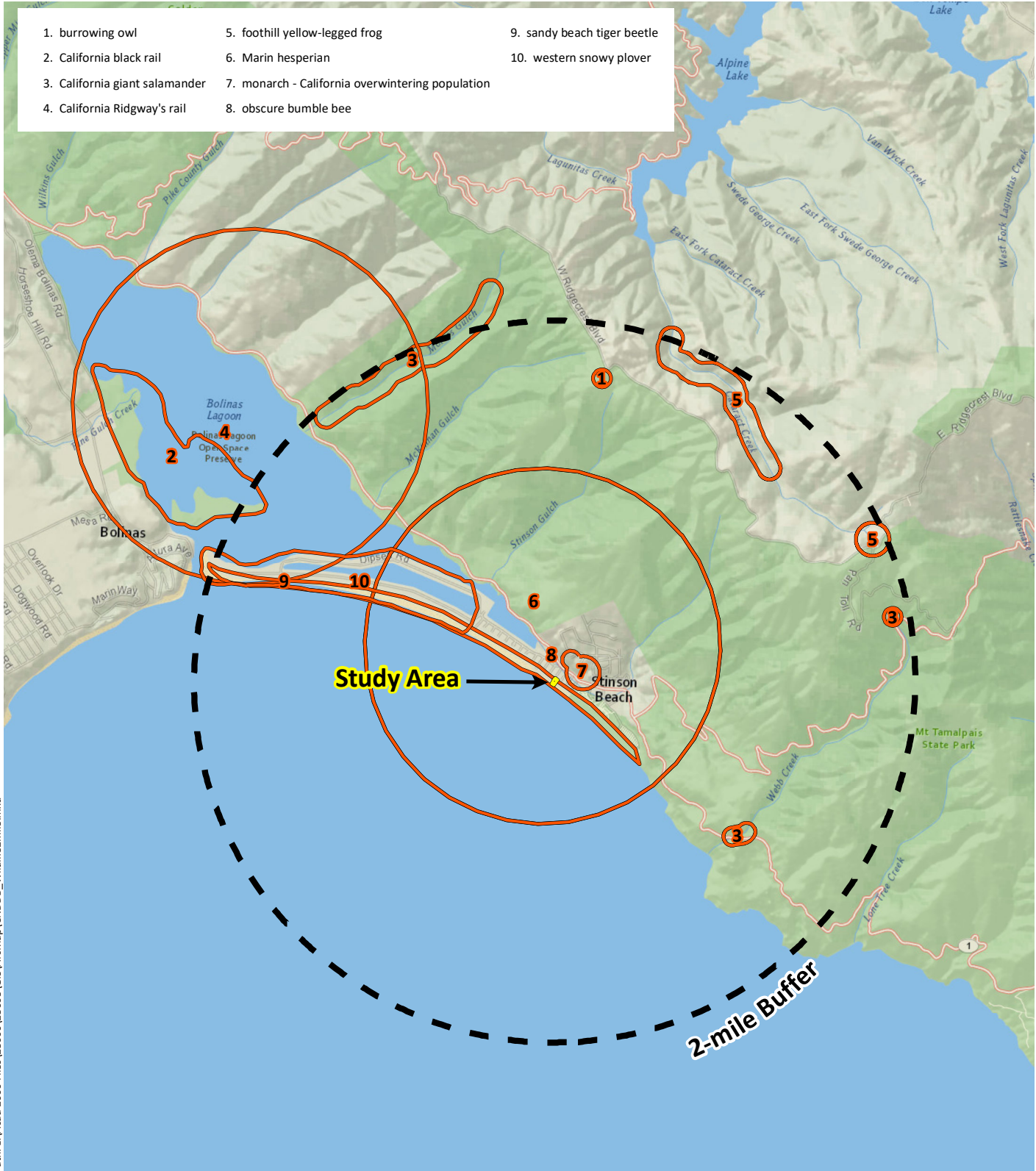


Sources: National Geographic, CNDDDB July 2019, WRA | Prepared By: njander, 8/15/2019

Figure x. Special-Status Plant Species Documented within 2-miles of the Study Area

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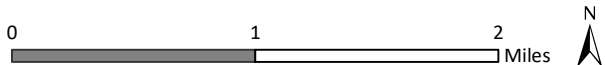




Sources: National Geographic, CNDDDB July 2019, WRA | Prepared By: njander, 8/15/2019

Figure 4. Special-Status Wildlife Species Documented within 2-miles of the Study Area

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Additionally, the Parcel is highly unlikely to support marine mammals or sea turtles due to the disturbed nature and location within a developed area with significant human traffic. No special-status wildlife species were observed during the site visit. No further actions are recommended for special-status wildlife species in the Parcel. No critical habitat for any listed species occurs within the Parcel.

Western Snowy Plover

A discussion concerning the western snowy plover (WSP; *Charadrius alexandrinus nivosus*) is included in this report as this species is listed as Threatened under the federal Endangered Species Act and as a Species of Special Concern by CDFW. Although WSP is unlikely to occur within the Parcel, historic occurrence of this species to the northwest warrants further discussion of this species.

The natural history of this small shorebird is summarized by USFWS (2007). Nesting typically occurs on sandy beaches but other sandy or saline substrates are also utilized, including gravel bars and salt ponds. Suitable beach habitats are open, flat, and feature sparse or absent vegetation. Although vegetation often provides cover for plover young, vegetative cover in nesting areas is generally no more than 18 percent and usually under 3 inches in height. During the non-breeding season, the northern California population includes both locally breeding individuals as well as those that breed in northern coastal and inland habitats and winter along the California coast.

There are nesting occurrences for WSP along the spit area within Stinson Beach (i.e., the area of Seadrift Road) but the most recent such record dates from 1977 (CDFW 2019a, Page and Stenzel 1981). Other local bird distribution references including eBird (2019) indicate that snowy plovers have been observed somewhat regularly on or near the spit over the last ten years, but only during the non-breeding season. Available information also suggests that these wintering birds were observed within beach or intertidal mudflat habitats as would be expected of this species.

The Parcel provides marginal habitat for WSP. The Parcel is a residential lot effectively surrounded on three sides by residential development. The eastern portion of the site is covered in ice plant, which is greater than the 18 percent limit of vegetation for WSP suitability suggested by the USFWS. Although the Parcel contains unvegetated sand beach habitat that transitions to the greater beach area, it is unlikely to support WSP nesting. Due to its location within an area of residential development, the Parcel and beach adjacent to the Parcel experience frequent disturbance from human and off-leash dog traffic, greatly reducing the habitat value for WSP. Thus, this beach and Parcel are unlikely to be used for WSP nesting, and WSP, including transient individuals, are not expected to occur within or adjacent to the Parcel.

Nesting Birds

No active nests were observed in the Parcel during the site visit, and the amount of habitat available for nesting is sparse and regularly disturbed by the many adjacent residences and public that regularly access Stinson Beach. Even so, there remains a low potential for one or more bird species to establish new nests within or adjacent to the Parcel. Removal of vegetation or ground disturbance could destroy active nests, harm individual birds and eggs, or cause nest abandonment if it occurred during the nesting season.

Even though the loss of a common bird nest is not considered significant as it would not constitute a threat to the continued persistence of local or larger population, nor represent a significant loss of habitat for the species, the Project proposes to conduct initial ground disturbance and remove vegetation outside the nesting season (i.e., September 1 to January 31) to avoid any potential impacts and scrutiny from oppositional parties.

Impacts to Biological Resources

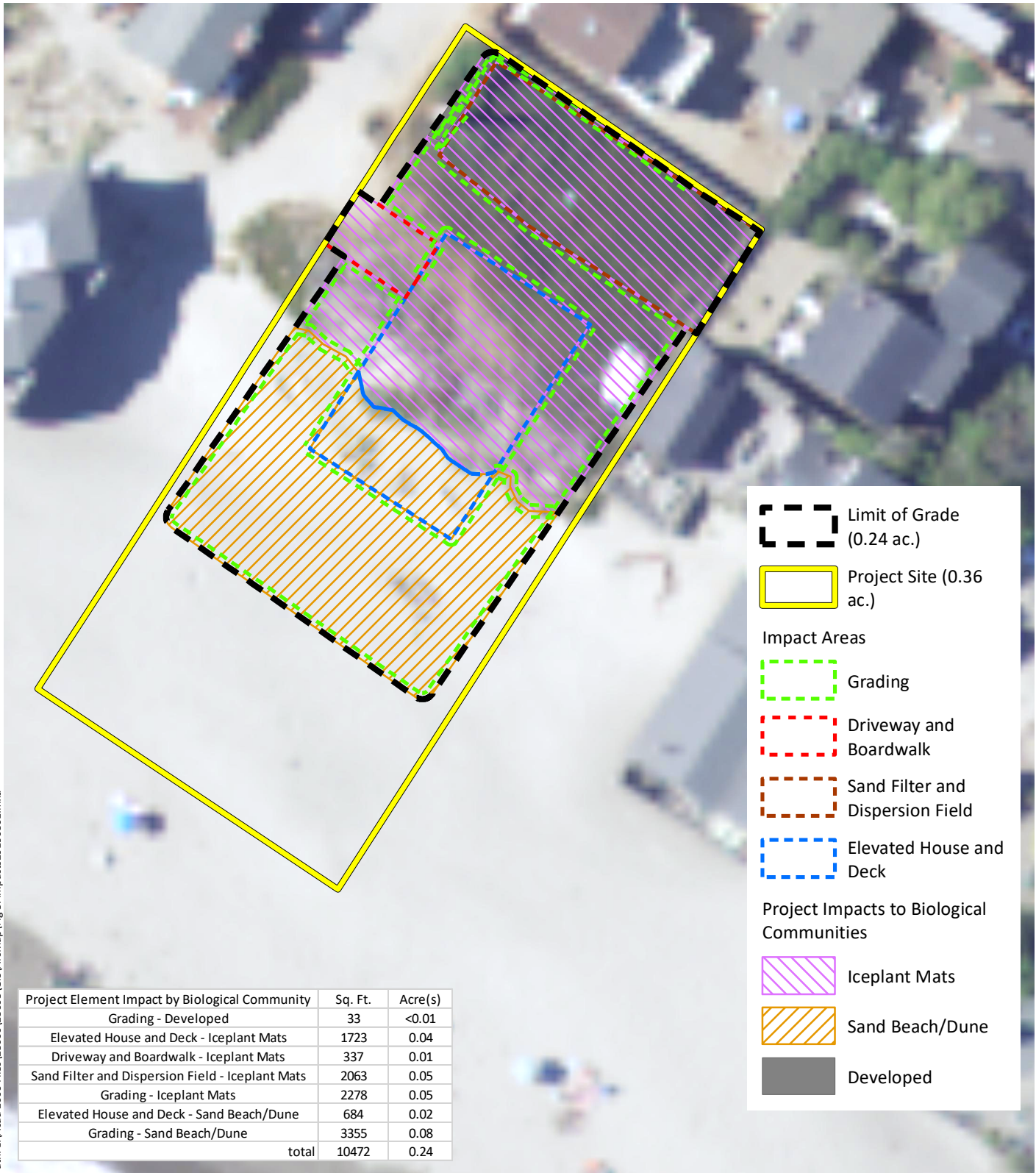
The Project includes the removal of the old wastewater system underlying the vacant lot and replacing it with a 2,000 gallon septic tank. Additionally a supporting 2,000 gallon dual compartment sump tank, and sub-grade concrete retaining wall will be constructed.

The construction of the proposed septic tank and associate structures would have direct impacts to the iceplant mats. Direct impacts to the non-native iceplant mat totaling square feet include 2063 square feet of septic system being installed below grade and revegetated and grading and backfilling other portions. Impacts from the proposed septic tank and associated structures are shown as “Sand Filter and Dispersion field” on Figure 5. Additionally Figure 5 displays potential future impacts from the housing/driveway this project (septic tank and associated structures) will support.

The criteria for impact significance to biological resources are described in the Guide for the Preparation of Site Assessments (Marin County Community Development Agency, *No Date*) and the Marin County EIR Guidelines, Appendix N, Criteria for Significance: Would the project:

- Substantially reduce the number or restrict the range of a rare, endangered or threatened plant or animal;
- Cause a fish or wildlife population to drop below self-sustaining levels; or,
- Adversely affect significant riparian lands, wetlands, marshes, and other significant wildlife habitats; or
- Affect the movement of wildlife?

Because no special-status species are expected to occur in the Parcel and given the current level of disturbance, the Project will not result in any of the above conditions.



Path: L:\Acad 2000 Files\28000\28005\GIS\ArcMap\Fig 5. Impacts20190801.mxd

Sources: NAIP Imagery 2016, WRA | Prepared By: njander, 8/15/2019

Figure x. Project Impacts to Biological Communities

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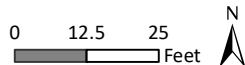


Table 1. Impact Areas Associated with the Proposed Project

	Area of Anticipated Impacts (square feet)		
	Indirect Impacts (Shading)	Direct Habitat Removal	Temporary (Grading and (Backfill))
Non-native Iceplant Mat	0	4,123	2278
Sand Beach	684	0	3355

We define and identify that sand beach based on geomorphological and soil composition characteristics rather than biological characteristics and use. No definition of a beach is presented in the Marin County LCP and we use our best professional judgement to define the beach area.

The Project will cause a loss to the iceplant mats. However, there are no plants nor animals, nor their habitats that are either rare or especially valuable. Additionally, because of the already disturbed nature of the Parcel, the Project would not result in a significant loss of common biological resources. Therefore the Project will not result in potentially significant adverse biological impacts to the environment.

Summary

Based on the site visit and review of information pertinent to the Parcel, the construction of the Project will not result in impacts to special-status plant and wildlife species or to their habitats. The habitats required by the special-status species known to occur in the Parcel vicinity are not present.

A total of 4123 square feet of iceplant mats will be permanently removed, replaced by structures and/or graded during the installation of the septic tank and associated structures.

The Parcel is already subject to regular human disturbance from adjacent residences, traffic, and other urban activities. Due to historical uses of the Parcel, persistence of CAL-IPC ranked ice plant mats, and overall lack of natural habitat as well as regular human visitation, the impacts described above will occur to already degraded habitat.

If you have questions or require additional information, please contact us.

Sincerely,

Ra'am Akiba Hajim
Biologist

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Appendix A

List of Observed Plant Species within the Project Site

Appendix A. List of observed plant species within the Study Area on July 16, 2019.

Scientific Name	Common Name	Origin	CAL-IPC Status
<i>Abronia latifolia</i>	Yellow sand verbena	native	-
<i>Ambrosia chamissonis</i>	Silver beachweed	native	-
<i>Avena fatua</i>	Wildoats	non-native (invasive)	Moderate
<i>Bromus diandrus</i>	Ripgut brome	non-native (invasive)	Moderate
<i>Carpobrotus edulis</i>	Iceplant	non-native (invasive)	High
<i>Distichlis spicata</i>	Salt grass	native	-
<i>Ehrharta erecta</i>	Upright veldt grass	non-native (invasive)	Moderate
<i>Elymus mollis ssp. mollis</i>	American dune grass	native	-
<i>Medicago polymorpha</i>	California burclover	non-native (invasive)	Limited
<i>Myoporum laetum</i>	Ngaio tree	non-native (invasive)	Moderate
<i>Oxalis pes-caprae</i>	Bermuda buttercup	non-native (invasive)	Moderate

Appendix B

Potential Special-Status Species to Occur in the Parcel

Table 1. Special-status plant species with the potential to occur on Stinson Beach Spit

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
pink sand-verbena <i>Abronia umbellata</i> var. <i>breviflora</i>	Rank 1B.1	Coastal dunes. Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun-Oct.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Blasdale's bent grass <i>Agrostis blasdalei</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms May-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Sonoma alopecurus <i>Alopecurus aequalis</i> var. <i>sonomensis</i>	FE, Rank 1B.1	Marshes and swamps (freshwater), riparian scrub. Elevation ranges from 20 to 1200 feet (5 to 365 meters). Blooms May-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Napa false indigo <i>Amorpha californica</i> var. <i>napensis</i>	Rank 1B.2	Broadleafed upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 390 to 6560 feet (120 to 2000 meters). Blooms Apr-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
bent-flowered fiddleneck <i>Amsinckia lunaris</i>	Rank 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 10 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
coast rockcress <i>Arabis blepharophylla</i>	Rank 4.3	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub/rocky. Elevation ranges from 10 to 3610 feet (3 to 1100 meters). Blooms Feb-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
Mt. Tamalpais manzanita <i>Arctostaphylos montana</i> <i>ssp. montana</i>	Rank 1B.3	Chaparral, valley and foothill grassland/serpentine, rocky. Elevation ranges from 520 to 2490 feet (160 to 760 meters). Blooms Feb-Apr.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Marin manzanita <i>Arctostaphylos virgata</i>	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, north coast coniferous forest/sandstone or granitic. Elevation ranges from 200 to 2300 feet (60 to 700 meters). Blooms Jan-Mar.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Carlotta Hall's lace fern <i>Aspidotis carlotta-halliae</i>	Rank 4.2	Chaparral, cismontane woodland/usually serpentine. Elevation ranges from 330 to 4590 feet (100 to 1400 meters). Blooms Jan-Dec.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Brewer's milk-vetch <i>Astragalus breweri</i>	Rank 4.2	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland (open, often gravelly)/often serpentine, volcanic. Elevation ranges from 300 to 2400 feet (90 to 730 meters). Blooms Apr-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
ocean bluff milk-vetch <i>Astragalus nuttallii</i> <i>var. nuttallii</i>	Rank 4.2	Coastal bluff scrub, coastal dunes. Elevation ranges from 10 to 390 feet (3 to 120 meters). Blooms Jan-Nov.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
coastal marsh milk-vetch <i>Astragalus pycnostachyus</i> <i>var. pycnostachyus</i>	Rank 1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, streamsides). Elevation ranges from 0 to 100 feet (0 to 30 meters). Blooms Apr-Oct.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
Thurber's reed grass <i>Calamagrostis crassiglumis</i>	Rank 2B.1	Coastal scrub (mesic), marshes and swamps (freshwater). Elevation ranges from 30 to 195 feet (10 to 60 meters). Blooms May-Aug.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
serpentine reed grass <i>Calamagrostis ophitidis</i>	Rank 4.3	Chaparral (open, often north-facing slopes), lower montane coniferous forest, meadows and seeps, valley and foothill grassland/serpentine, rocky. Elevation ranges from 300 to 3490 feet (90 to 1065 meters). Blooms Apr-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Brewer's calandrinia <i>Calandrinia breweri</i>	Rank 4.2	Chaparral, coastal scrub/sandy or loamy, disturbed sites and burns. Elevation ranges from 30 to 4000 feet (10 to 1220 meters). Blooms Mar-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Oakland star-tulip <i>Calochortus umbellatus</i>	Rank 4.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland/often serpentine. Elevation ranges from 330 to 2300 feet (100 to 700 meters). Blooms Mar-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
coastal bluff morning-glory <i>Calystegia purpurata</i> ssp. <i>saxicola</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, north coast coniferous forest. Elevation ranges from 0 to 345 feet (0 to 105 meters). Blooms (Mar)Apr-Sep.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
swamp harebell <i>Campanula californica</i>	Rank 1B.2	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, marshes and swamps (freshwater), north coast coniferous forest/mesic. Elevation ranges from 0 to 1330 feet (1 to 405 meters). Blooms Jun-Oct.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
seaside bittercress <i>Cardamine angulata</i>	Rank 2B.1	Lower montane coniferous forest, north coast coniferous forest/wet areas, streambanks. Elevation ranges from 210 to 3000 feet (65 to 915 meters). Blooms (Jan), Mar-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Lyngbye's sedge <i>Carex lyngbyei</i>	Rank 2B.2	Marshes and swamps (brackish or freshwater). Elevation ranges from 0 to 30 feet (0 to 10 meters). Blooms Apr-Aug.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Tiburon paintbrush <i>Castilleja affinis</i> var. <i>neglecta</i>	FE, ST, Rank 1B.2	Valley and foothill grassland (serpentine). Elevation ranges from 200 to 1310 feet (60 to 400 meters). Blooms Apr-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
johnny-nip <i>Castilleja ambigua</i> var. <i>ambigua</i>	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal poolsmargins. Elevation ranges from 0 to 1430 feet (0 to 435 meters). Blooms Mar-Aug.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Humboldt Bay owl's-clover <i>Castilleja ambigua</i> var. <i>humboldtiensis</i>	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms Apr-Aug.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
Nicasio ceanothus <i>Ceanothus decornutus</i>	Rank 1B.2	Chaparral (maritime). Elevation ranges from 770 to 950 feet (235 to 290 meters). Blooms Mar-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
glory brush <i>Ceanothus gloriosus</i> var. <i>exaltatus</i>	Rank 4.3	Chaparral. Elevation ranges from 100 to 2000 feet (30 to 610 meters). Blooms Mar-Jun (Aug).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Point Reyes ceanothus <i>Ceanothus gloriosus</i> var. <i>gloriosus</i>	Rank 4.3	Coastal bluff scrub, closed-cone coniferous forest, coastal dunes, coastal scrub/sandy. Elevation ranges from 20 to 1710 feet (5 to 520 meters). Blooms Mar-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Mt. Vision ceanothus <i>Ceanothus gloriosus</i> var. <i>porrectus</i>	Rank 1B.3	Closed-cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 80 to 1000 feet (25 to 305 meters). Blooms Feb-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Mason's ceanothus <i>Ceanothus masonii</i>	SR, Rank 1B.2	Chaparral (openings, rocky, serpentine). Elevation ranges from 750 to 1640 feet (230 to 500 meters). Blooms Mar-Apr.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Kern ceanothus <i>Ceanothus pinetorum</i>	Rank 4.3	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest/rocky, granitic. Elevation ranges from 5250 to 9010 feet (1600 to 2745 meters). Blooms May-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
Monterey ceanothus <i>Ceanothus rigidus</i>	Rank 4.2	Closed-cone coniferous forest, chaparral, coastal scrub/sandy. Elevation ranges from 10 to 1800 feet (3 to 550 meters). Blooms Feb-Apr (Jun).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Point Reyes bird's-beak <i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 30 feet (0 to 10 meters). Blooms Jun-Oct.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
San Francisco Bay spineflower <i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub/sandy. Elevation ranges from 10 to 710 feet (3 to 215 meters). Blooms Apr-Jul (Aug).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Sonoma spineflower <i>Chorizanthe valida</i>	FE, SE, Rank 1B.1	Coastal prairie (sandy). Elevation ranges from 30 to 1000 feet (10 to 305 meters). Blooms Jun-Aug.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Bolander's water-hemlock <i>Cicuta maculata</i> var. <i>bolanderi</i>	Rank 2B.1	Marshes and swampscoastal, fresh or brackish water. Elevation ranges from 0 to 660 feet (0 to 200 meters). Blooms Jul-Sep.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Franciscan thistle <i>Cirsium andrewsii</i>	Rank 1B.2	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub/mesic, sometimes serpentine. Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms Mar-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
Mt. Tamalpais thistle <i>Cirsium hydrophilum</i> var. <i>vaseyi</i>	Rank 1B.2	Broadleafed upland forest, chaparral, meadows and seeps/serpentine seeps. Elevation ranges from 790 to 2030 feet (240 to 620 meters). Blooms May-Aug.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
seaside cistanthe <i>Cistanthe maritima</i>	Rank 4.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland/sandy. Elevation ranges from 20 to 980 feet (5 to 300 meters). Blooms (Feb), Mar-Jun (Aug).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
round-headed Chinese-houses <i>Collinsia corymbosa</i>	Rank 1B.2	Coastal dunes. Elevation ranges from 0 to 70 feet (0 to 20 meters). Blooms Apr-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
California lady's-slipper <i>Cypripedium californicum</i>	Rank 4.2	Bogs and fens, lower montane coniferous forest/seeps and streambanks, usually serpentine. Elevation ranges from 100 to 9020 feet (30 to 2750 meters). Blooms Apr-Aug (Sep).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
western leatherwood <i>Dirca occidentalis</i>	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland/mesic. Elevation ranges from 80 to 1390 feet (25 to 425 meters). Blooms Jan-Mar (Apr).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
California bottle-brush grass <i>Elymus californicus</i>	Rank 4.3	Broadleafed upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms May-Aug (Nov).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
Koch's cord moss <i>Entosthodon kochii</i>	Rank 1B.3	Cismontane woodland (soil). Elevation ranges from 590 to 3280 feet (180 to 1000 meters).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Tiburon buckwheat <i>Eriogonum luteolum</i> var. <i>caninum</i>	Rank 1B.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland/serpentine, sandy to gravelly. Elevation ranges from 0 to 2300 feet (0 to 700 meters). Blooms May-Sep.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
bluff wallflower <i>Erysimum concinnum</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Elevation ranges from 0 to 610 feet (0 to 185 meters). Blooms Feb-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
San Francisco wallflower <i>Erysimum franciscanum</i>	Rank 4.2	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland/often serpentine or granitic, sometimes roadsides. Elevation ranges from 0 to 1800 feet (0 to 550 meters). Blooms Mar-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
minute pocket moss <i>Fissidens pauperculus</i>	Rank 1B.2	North coast coniferous forest (damp coastal soil). Elevation ranges from 30 to 3360 feet (10 to 1024 meters).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Marin checker lily <i>Fritillaria lanceolata</i> var. <i>tristulis</i>	Rank 1B.1	Coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 50 to 490 feet (15 to 150 meters). Blooms Feb-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
fragrant fritillary <i>Fritillaria liliacea</i>	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland/often serpentine. Elevation ranges from 10 to 1350 feet (3 to 410 meters). Blooms Feb-Apr.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
blue coast gilia <i>Gilia capitata</i> <i>ssp. chamissonis</i>	Rank 1B.1	Coastal dunes, coastal scrub. Elevation ranges from 10 to 660 feet (2 to 200 meters). Blooms Apr-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
woolly-headed gilia <i>Gilia capitata</i> <i>ssp. tomentosa</i>	Rank 1B.1	Coastal bluff scrub, valley and foothill grassland/serpentine, rocky, outcrops. Elevation ranges from 30 to 720 feet (10 to 220 meters). Blooms May-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
dark-eyed gilia <i>Gilia millefoliata</i>	Rank 1B.2	Coastal dunes. Elevation ranges from 5 to 100 feet (2 to 30 meters). Blooms Apr-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
San Francisco gumplant <i>Grindelia hirsutula</i> <i>var. maritima</i>	Rank 3.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland/sandy or serpentine. Elevation ranges from 50 to 1310 feet (15 to 400 meters). Blooms Jun-Sep.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Diablo helianthella <i>Helianthella castanea</i>	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation ranges from 200 to 4270 feet (60 to 1300 meters). Blooms Mar-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
congested-headed hayfield tarplant <i>Hemizonia congesta</i> <i>ssp. congesta</i>	Rank 1B.2	Valley and foothill grassland/sometimes roadsides. Elevation ranges from 70 to 1840 feet (20 to 560 meters). Blooms Apr-Nov.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
short-leaved evax <i>Hesperevax sparsiflora</i> <i>var. brevifolia</i>	Rank 1B.2	Coastal bluff scrub (sandy), coastal dunes, coastal prairie. Elevation ranges from 0 to 710 feet (0 to 215 meters). Blooms Mar-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Marin western flax <i>Hesperolinon congestum</i>	FT, ST, Rank 1B.1	Chaparral, valley and foothill grassland/serpentine. Elevation ranges from 20 to 1210 feet (5 to 370 meters). Blooms Apr-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
water star-grass <i>Heteranthera dubia</i>	Rank 2B.2	Marshes and swamps (alkaline, still or slow-moving water)/requires a ph of 7 or higher, usually in slightly eutrophic waters. Elevation ranges from 100 to 4900 feet (30 to 1495 meters). Blooms Jul-Oct.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Santa Cruz tarplant <i>Holocarpha macradenia</i>	FT, SE, Rank 1B.1	Coastal prairie, coastal scrub, valley and foothill grassland/often clay, sandy. Elevation ranges from 30 to 720 feet (10 to 220 meters). Blooms Jun-Oct.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Kellogg's horkelia <i>Horkelia cuneata</i> <i>var. sericea</i>	Rank 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub/sandy or gravelly, openings. Elevation ranges from 30 to 660 feet (10 to 200 meters). Blooms Apr-Sep.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
Point Reyes horkelia <i>Horkelia marinensis</i>	Rank 1B.2	Coastal dunes, coastal prairie, coastal scrub/sandy. Elevation ranges from 20 to 2480 feet (5 to 755 meters). Blooms May-Sep.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
thin-lobed horkelia <i>Horkelia tenuiloba</i>	Rank 1B.2	Broadleafed upland forest, chaparral, valley and foothill grassland/mesic openings, sandy. Elevation ranges from 160 to 1640 feet (50 to 500 meters). Blooms May-Jul (Aug).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
harlequin lotus <i>Hosackia gracilis</i>	Rank 4.2	Broadleafed upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, north coast coniferous forest, valley and foothill grassland/wetlands, roadsides. Elevation ranges from 0 to 2300 feet (0 to 700 meters). Blooms Mar-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
island rock lichen <i>Hypogymnia schizidiata</i>	Rank 1B.3	Closed-cone coniferous forest, chaparral. Elevation ranges from 1180 to 1330 feet (360 to 405 meters).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
small groundcone <i>Kopsiopsis hookeri</i>	Rank 2B.3	North coast coniferous forest. Elevation ranges from 300 to 2900 feet (90 to 885 meters). Blooms Apr-Aug.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
perennial goldfields <i>Lasthenia californica</i> <i>spp. macrantha</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub. Elevation ranges from 20 to 1710 feet (5 to 520 meters). Blooms Jan-Nov.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
beach layia <i>Layia carnosa</i>	FE, SE, Rank 1B.1	Coastal dunes, coastal scrub (sandy). Elevation ranges from 0 to 200 feet (0 to 60 meters). Blooms Mar-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
bristly leptosiphon <i>Leptosiphon acicularis</i>	Rank 4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 180 to 4920 feet (55 to 1500 meters). Blooms Apr-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
coast yellow leptosiphon <i>Leptosiphon croceus</i>	Rank 1B.1	Coastal bluff scrub, coastal prairie. Elevation ranges from 30 to 490 feet (10 to 150 meters). Blooms Apr-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
large-flowered leptosiphon <i>Leptosiphon grandiflorus</i>	Rank 4.2	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland/usually sandy. Elevation ranges from 20 to 4000 feet (5 to 1220 meters). Blooms Apr-Aug.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
woolly-headed lessingia <i>Lessingia hololeuca</i>	Rank 3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland/clay, serpentine. Elevation ranges from 50 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Tamalpais lessingia <i>Lessingia micradenia</i> var. <i>micradenia</i>	Rank 1B.2	Chaparral, valley and foothill grassland/usually serpentine, often roadsides. Elevation ranges from 330 to 1640 feet (100 to 500 meters). Blooms (Jun), Jul-Oct.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Mason's lilaeopsis <i>Lilaeopsis masonii</i>	SR, Rank 1B.1	Marshes and swamps (brackish or freshwater), riparian scrub. Elevation ranges from 0 to 30 feet (0 to 10 meters). Blooms Apr-Nov.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
coast lily <i>Lilium maritimum</i>	Rank 1B.1	Broadleafed upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, marshes and swamps (freshwater), north coast coniferous forest/sometimes roadside. Elevation ranges from 20 to 1560 feet (5 to 475 meters). Blooms May-Aug.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Mt. Diablo cottonweed <i>Micropus amphibolus</i>	Rank 3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland/rocky. Elevation ranges from 150 to 2710 feet (45 to 825 meters). Blooms Mar-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
marsh microseris <i>Microseris paludosa</i>	Rank 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 20 to 980 feet (5 to 300 meters). Blooms Apr-Jun (Jul).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
elongate copper moss <i>Mielichhoferia elongata</i>	Rank 4.3	Cismontane woodland (metamorphic, rock, usually vernal mesic). Elevation ranges from 1640 to 4270 feet (500 to 1300 meters).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
northern curly-leaved monardella <i>Monardella sinuata</i> ssp. <i>nigrescens</i>	Rank 1B.2	Chaparral (scr co.), coastal dunes, coastal scrub, lower montane coniferous forest (scr co., ponderosa pine sandhills)/sandy. Elevation ranges from 0 to 980 feet (0 to 300 meters). Blooms (Apr), May-Jul (Aug), (Sep).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Baker's navarretia <i>Navarretia leucocephala</i> ssp. <i>bakeri</i>	Rank 1B.1	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools/mesic. Elevation ranges from 20 to 5710 feet (5 to 1740 meters). Blooms Apr-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Marin County navarretia <i>Navarretia rosulata</i>	Rank 1B.2	Closed-cone coniferous forest, chaparral/serpentine, rocky. Elevation ranges from 660 to 2080 feet (200 to 635 meters). Blooms May-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
white-rayed pentachaeta <i>Pentachaeta bellidiflora</i>	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland (often serpentine). Elevation ranges from 110 to 2030 feet (35 to 620 meters). Blooms Mar-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Gairdner's yampah <i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>	Rank 4.2	Broadleaved upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools/vernally mesic. Elevation ranges from 0 to 2000 feet (0 to 610 meters). Blooms Jun-Oct.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
North Coast phacelia <i>Phacelia insularis</i> var. <i>continentis</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes/sandy, sometimes rocky. Elevation ranges from 30 to 560 feet (10 to 170 meters). Blooms Mar-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
hairless popcornflower <i>Plagiobothrys glaber</i>	Rank 1A	Meadows and seeps (alkaline), marshes and swamps (coastal salt). Elevation ranges from 50 to 590 feet (15 to 180 meters). Blooms Mar-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
North Coast semaphore grass <i>Pleuropogon hooverianus</i>	ST, Rank 1B.1	Broadleafed upland forest, meadows and seeps, north coast coniferous forest/open areas, mesic. Elevation ranges from 30 to 2200 feet (10 to 671 meters). Blooms Apr-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
nodding semaphore grass <i>Pleuropogon refractus</i>	Rank 4.2	Lower montane coniferous forest, meadows and seeps, north coast coniferous forest, riparian forest/mesic. Elevation ranges from 0 to 5250 feet (0 to 1600 meters). Blooms (Mar), Apr-Aug.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Oregon polemonium <i>Polemonium carneum</i>	Rank 2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation ranges from 0 to 6000 feet (0 to 1830 meters). Blooms Apr-Sep.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Marin knotweed <i>Polygonum marinense</i>	Rank 3.1	Marshes and swamps (coastal salt or brackish). Elevation ranges from 0 to 30 feet (0 to 10 meters). Blooms (Apr), May-Aug (Oct).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
Tamalpais oak <i>Quercus parvula</i> var. <i>tamalpaisensis</i>	Rank 1B.3	Lower montane coniferous forest. Elevation ranges from 330 to 2460 feet (100 to 750 meters). Blooms Mar-Apr.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Lobb's aquatic buttercup <i>Ranunculus lobbii</i>	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools/mesic. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms Feb-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Victor's gooseberry <i>Ribes victoris</i>	Rank 4.3	Broadleaved upland forest, chaparral/mesic, shady. Elevation ranges from 330 to 2460 feet (100 to 750 meters). Blooms Mar-Apr.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Sanford's arrowhead <i>Sagittaria sanfordii</i>	Rank 1B.2	Marshes and swamps (assorted shallow freshwater). Elevation ranges from 0 to 2135 feet (0 to 650 meters). Blooms May-Oct(Nov).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Point Reyes checkerbloom <i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	Rank 1B.2	Marshes and swamps (freshwater, near coast). Elevation ranges from 10 to 250 feet (3 to 75 meters). Blooms Apr-Sep.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Marin checkerbloom <i>Sidalcea hickmanii</i> ssp. <i>viridis</i>	Rank 1B.3	Chaparral (serpentine). Elevation ranges from 160 to 1410 feet (50 to 430 meters). Blooms May-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
Scouler's catchfly <i>Silene scouleri</i> ssp. <i>scouleri</i>	Rank 2B.2	Coastal bluff scrub, coastal prairie, valley and foothill grassland. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms (Mar-May)Jun-Aug(Sep).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Santa Cruz microseris <i>Stebbinsoseris decipiens</i>	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland/open areas, sometimes serpentine. Elevation ranges from 30 to 1640 feet (10 to 500 meters). Blooms Apr-May.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Tamalpais jewelflower <i>Streptanthus batrachopus</i>	Rank 1B.3	Closed-cone coniferous forest, chaparral/serpentine. Elevation ranges from 1000 to 2130 feet (305 to 650 meters). Blooms Apr-Jul.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
Mt. Tamalpais bristly jewelflower <i>Streptanthus glandulosus</i> ssp. <i>pulchellus</i>	Rank 1B.2	Chaparral, valley and foothill grassland/serpentine. Elevation ranges from 490 to 2620 feet (150 to 800 meters). Blooms May-Jul (Aug).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
two-fork clover <i>Trifolium amoenum</i>	FE, Rank 1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elevation ranges from 20 to 1360 feet (5 to 415 meters). Blooms Apr-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
San Francisco owl's-clover <i>Triphysaria floribunda</i>	Rank 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland/usually serpentine. Elevation ranges from 30 to 520 feet (10 to 160 meters). Blooms Apr-Jun.	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**
coastal triquetrella <i>Triquetrella californica</i>	Rank 1B.2	Coastal bluff scrub, coastal scrub/soil. Elevation ranges from 30 to 330 feet (10 to 100 meters).	No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Appendix C

Representative Photographs of the Parcel



Photograph 1. The Study Area where the single-family home is proposed, looking southeast. Photograph taken July 16, 2019.



Photograph 2. The Study Area where the single-family home is proposed, looking northwest. Photograph taken December 16, 2019.

Appendix B: Cultural Resources Report

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**Cultural Resources Study for the
21 Calle del Onda Wastewater System Project
Stinson Beach, Marin County, California**

Kean Walker-Follett
and
Tom Origer MA/RPA

July 24, 2019



**Cultural Resources Study for the
21 Calle del Onda Wastewater System Project
Stinson Beach, Marin County, California**

Prepared by:

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July 24, 2019

ABSTRACT

Tom Origer & Associates conducted a cultural resources study of the property at 21 Calle del Onda, Stinson Beach, Marin County, California. The study was requested by Audrey Smith of WRA, Inc and authorized by Justin Semion of WRA Inc. This study was conducted to meet the requirements of the Stinson Beach County Water District and those of the California Environmental Quality Act. The purpose of this report is to identify potential historical resources other than Tribal Cultural Resources, as defined in Public Resources Code [PRC] 21074 (a)(1)(A)-(B) and discussed in the Regulatory Context section). Tribal Cultural Resources are defined in Public Resources Code [PRC] 21074 (a)(1)(A)-(B).

The proposed project includes replacing the current wastewater system with a new 2,000-gallon septic tank, a 2,000-gallon dual compartment sump tank, and put in sub-grade concrete retaining wall at 21 Calle del Onda, Stinson Beach, Marin County.

This study included archival research at the Northwest Information Center, Sonoma State University, examination of the library and files of Tom Origer & Associates, Native American contact, and field inspection of the study area. No cultural resources were found within the study area.

Synopsis

Project: 21 Calle del Onda Wastewater System Project
Location: 21 Calle del Onda, Stinson Beach, Marin County
APN: 195-162-49
Quadrangles: Bolinas 7.5'
Study Type: Intensive
Scope: 0.35 acres
Field Hours: 1 hour
NWIC #: 19-0069
TOA #: 2019-061
Finds: No cultural resources

Key Personnel

Eileen Barrow conducted the archival record search at the North West Information Center for this study. Mrs. Barrow has been with Tom Origer & Associates since 2005. She holds a Master of Arts in cultural resources management from Sonoma State University. Mrs. Barrow's experience includes work in compliance with local ordinances, CEQA, NEPA, and Section 106 (NHPA) requirements. Her professional affiliations include the Society for American Archaeology, the Society for California Archaeology, the California Historical Society, the Sonoma County Historical Society, and the Western Obsidian Focus Group.

Tom Origer provided project oversight for this study. Mr. Origer obtained a Master of Arts in Anthropology from San Francisco State University in 1983, after obtaining a Bachelor of Arts degree in Anthropology at Sonoma State University in 1974. He has over forty years of experience in cultural resources management throughout Northern California. His experience includes work that has been completed in compliance with local ordinances, CEQA, NEPA, and Section 106 (NHPA) requirements. Mr. Origer taught archaeological analysis and field archaeology classes at Santa Rosa Junior College from 1979 through 2009. He has been affiliated with the Society for California Archaeology (Presidential duties from April 1998 to April 2001), the International Association for Obsidian Studies (charter member and President from 1990-1992), the Archaeological Institute of America (President of the North Coast Society from 1985 to 1987), the Society for American Archaeology, the Society for Historical Archaeology, and the Register of Professional Archaeologists.

Kean Walker-Follett Prepared the report for this study. Mr. Walker-Follett has been a student of Anthropology at the Santa Rosa Junior College for four years and is currently working towards his Associates of Arts. He has been involved with California Archeology for three years.

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INTRODUCTION

This report describes a cultural resources study of the property at 21 Calle del Onda, Stinson Beach, Marin County California (Figure 1). The study was requested by Audrey Smith of WRA, Inc. and authorized by Justin Semion of WRA Inc. This study was conducted in compliance with the requirements of the Stinson Beach County Water District and those of the California Environmental Quality Act (CEQA). The proposed project includes replacing the current wastewater system with a new 2,000-gallon septic tank, a 2,000-gallon dual compartment sump tank, and put in sub-grade concrete retaining wall at 21 Calle del Onda, Stinson Beach, Marin County. Documentation pertaining to this study is on file at Tom Origer & Associates (File No. 2019-061).

REGULATORY CONTEXT

The State of California requires that cultural resources be considered during the environmental review process. This process is outlined in CEQA and accomplished by an inventory of resources within a study area and by assessing the potential that historical resources could be affected by development. The term “Historical Resources” encompasses all forms of cultural resources including prehistoric and historical archaeological sites and built environment resources (e.g., buildings, bridges, canals), that would be eligible for inclusion on the California Register of Historical Resources (California Register). An additional category of resources is defined in CEQA under the term “Tribal Cultural Resources” (Public Resources Code Section 21074). They are not addressed in this report because Tribal Cultural Resources are resources that are of specific concern to California Native American tribes, and knowledge of such resources is limited to tribal people. Pursuant to CEQA, as revised in July 2015, such resources are to be identified by tribal people in direct, confidential consultation with the lead agency (PRC §21080.3.1).

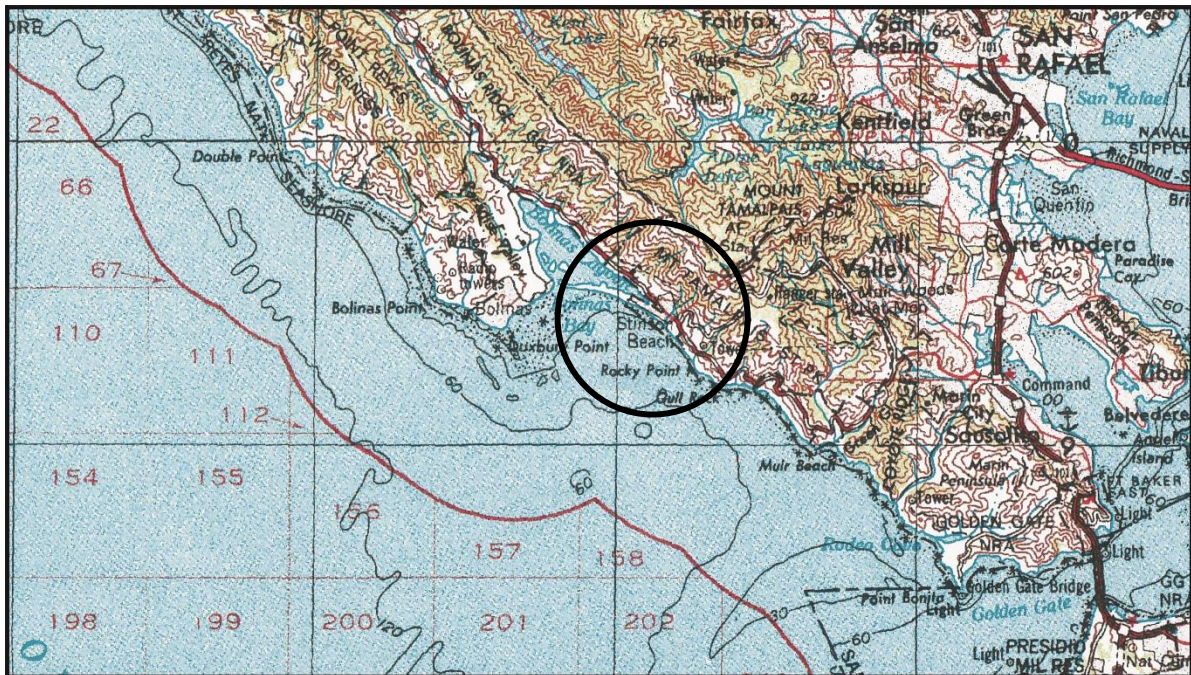


Figure 1. Project vicinity (adapted from the 1980 San Francisco 1:250,000-scale USGS map).

This cultural resources study was designed to satisfy environmental issues specified in the CEQA and its guidelines (Title 14 CCR §15064.5) by: (1) identifying historical resources within the project area; (2) offering a preliminary significance evaluation of the identified cultural resources; (3) assessing resource vulnerability to effects that could arise from project activities; and (4) offering suggestions designed to protect resource integrity, as warranted.

Resource Definitions

Historical resources are classified by the State Office of Historic Preservation (OHP) as sites, buildings, structures, objects and districts, and each is described by OHP (1995) as follows.

Site. A site is the location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure.

Building. A building, such as a house, barn, church, hotel, or similar construction, is created principally to shelter any form of human activity. “Building” may also be used to refer to a historically and functionally related unit, such as a courthouse and jail, or a house and barn.

Structure. The term “structure” is used to distinguish from buildings those functional constructions made usually for purposes other than creating human shelter.

Object. The term “object” is used to distinguish from buildings and structures those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object is associated with a specific setting or environment.

District. A district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development.

Significance Criteria

When a project might impact a cultural resource, the project proponent is required to conduct an assessment to determine whether the impact may be one that is significant. Consequently, it is necessary to determine the importance of resources that could be impacted. The importance of a resource is measured in terms of criteria for inclusion on the California Register. A resource may be important if it meets any one of the criteria, or if it is already listed on the California Register or a local register (Title 14 CCR, §4852).

An important resource is one which:

1. 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.
2. Is associated with the lives of persons important to local, California, or national history.

3. 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.
4. Has yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation.

In addition to meeting one or more of the above criteria, eligibility for the California Register requires that a resource retains sufficient integrity to convey a sense of its significance or importance. Seven elements are considered key in considering a property's integrity: location, design, setting, materials, workmanship, feeling, and association.

The OHP advocates that all resources over 45 years old be recorded for inclusion in the OHP filing system (OHP 1995:2), although the use of professional judgment is urged in determining whether a resource warrants documentation.

PROJECT SETTING

Study Area Location and Description

The study area lies on Stinson Beach, a west trending sand bar separating the Bolinas Lagoon from Bolinas Bay. Approximately two miles long and a quarter mile wide at its widest point, Stinson Beach was once shorter and thinner until the need for buildable land caused the sand bar to be extended with fill.

The study area is located at 21 Calle del Onda (APN 195-162-49), Stinson Beach, Marin County, as shown on the Bolinas 7.5' USGS topographic map (Figure 2). This part of Marin County has remained relatively rural. The surrounding land consists of parkland that belongs to the Mt. Tamalpais State Park and the Golden Gate National Recreation Area. Figure 3 provides a current overview of the study area.

The study area consists of 0.35 acres situated on level land primarily consisting of beach sand. The closest fresh water source is an unnamed creek located approximately 125 meters north of the study area.

The geology of the study area consists of a mixture of artificial fill, and beach and dune sand which dates to the Quaternary Period (Graymer *et. al* 2006). The Quaternary Period dates from approximately 2.5 million years ago to present.

Soils within the study area belong to the Dune Land Series (Kashiwagi 1985: Sheet 11). Dune Land consist of hummocks, mounds, and hills of loose sand blown from nearby beaches. In a natural state these soils support the growth of grasses, such as wire grass and sagebrush. Non-native succulents are also supported by this soil type (National Parks Service 2015). Historically, parcels containing Dune Land soils were used for recreation and wildlife habitat as it has little agricultural value (Kashiwagi 1985: 29).



Figure 2. Study area location (adapted from the 1993 Bolinas 7.5' USGS topographic map).



Figure 3. Overview photo of study area, facing southwest.

Cultural Setting

Prehistory

The concept of prehistory refers to the period of time before events were recorded in writing and varies worldwide. Because there is no written record, our understanding of California prehistory relies on archaeological materials and oral histories passed down through generations. Early archaeological research in this area began with the work of Max Uhle and Nels Nelson. Uhle is credited with the first scientific excavation in California with his work at the Emeryville Shellmound in 1902, and Nelson spent several years (1906 to 1908) surveying the San Francisco Bay margins and California coast for archaeological sites. In the 1930s, archaeologists from Sacramento Junior College and the University of California began piecing together a sequence of cultures primarily based on burial patterns and ornamental artifact from sites in the lower Sacramento Valley (Lillard *et al.* 1939; Heizer and Fenenga 1939). Their cultural sequence became known as the Central California Taxonomic System (CCTS), which identified three culture periods termed the Early, Middle, and Late Horizons, but without offering date ranges. Refinement of the CCTS became a chief concern of archaeologists as the century progressed with publications by Richard Beardsley (1948, 1954) and Clement Meighan (1955) based on materials excavated by the University of California archaeological survey.

In 1973, David Fredrickson synthesized prior work, and in combination with his own research, he developed a regional chronology that is used to this day, albeit modified for locality-specific circumstances. Fredrickson's scheme shows that native peoples have occupied the region for over 11,000 years (which is supported by Erlandson *et al.* 2007), and during that time, shifts took place in their social, political, and ideological regimes (Fredrickson 1973). While Fredrickson's chronology was adopted by many archaeologists, Beardsley's cultural sequence was adopted by others creating a roughly North Bay-South Bay division in usage.

In an effort to bridge the differences between chronologies, Milliken *et al.* (2007: Figure 8.4) presented a concordance for comparing time periods, cultural patterns, and local variations for the San Francisco Bay Area. Milliken included Dating Scheme D, as presented by Groza in 2002, which is a refinement of previous radiocarbon-based temporal sequences for the San Francisco Bay Area. More recently, Byrd, Whitaker, Mikkelsen, and Rosenthal (2017) called upon archaeologist to abandon previous temporal sequences in favor of Scheme D, further refined in Groza *et al.* 2011. Table 1 assimilates Scheme D, Fredrickson's (1973) chronology, and the obsidian hydration dating scheme from Origer (1987). Note that the Early, Middle, Late Horizon scheme is still evident though refinements have been made within those categories.

Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

These horizons or periods are marked by a transition from large projectile points and millingslabs, indicating a focus on hunting and gathering during the Early Period, to a marine focus during the Middle Period evidenced by the number of shellmounds in the Bay Area. The Middle Period also saw more reliance on acorns and the use of bowl-shaped mortars and pestles. Acorn exploitation increased during the Late Period and the bow and arrow were introduced.

Prehistoric archaeological site indicators expected to be found in the region include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and hand-stones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire affected stones.

Table 1. North Bay/San Francisco Bay Area Chronology

Temporal Period ¹	Approximate Time Range ¹	~ Hydration Interval (μ) ²	Scheme D Periods ³	Approximate Time Range ⁴	~ Hydration Interval (μ) ⁵
Historical	< A.D. 1800	<1.20	Historic Mission	A.D. 1835 to A.D. 1770	1.10 - 1.27
Upper Emergent	A.D. 1800 to A.D. 1500	1.21 - 1.84	Late 2	A.D. 1770 to A.D. 1520	1.28 - 1.80
Lower Emergent	A.D. 1500 to A.D. 1000	1.85 - 2.58	Late 1b	A.D. 1520 to A.D. 1390	1.81 - 2.02
			Late 1a	A.D. 1390 to A.D. 1265	2.03 - 2.22
			Middle/Late Transition	A.D. 1265 to A.D. 1020	2.23 - 2.55
Upper Archaic	A.D. 1000 to 500 B.C.	2.59 - 4.05	Middle 4	A.D. 1020 to A.D. 750	2.56 - 2.88
			Middle 3	A.D. 750 to A.D. 585	2.89 - 3.06
			Middle 2	A.D. 585 to A.D. 420	3.07 - 3.23
			Middle 1	A.D. 420 to 200 B.C.	3.24 - 3.80
Middle Archaic	500 B.C. to 3000 B.C.	4.06 - 5.72	Early/Middle Transition	200 B.C. to 600 B.C.	3.81 - 4.13
			Early	600 B.C. to 2100 B.C.	4.14 - 5.18
Lower Archaic	3000 B.C. to 6000 B.C.	5.73 - 7.23			
Paleo-Indian	6000 B.C. to 8000 B.C.	7.24 - 8.08+			

¹ based on Fredrickson (1994)

² based on Napa Glass Mountain rate by Origer (1987)

³ based on Groza *et al.* (2011)

⁴ based on Groza *et al.* (2011) and Byrd *et al.* (2017)

⁵ based on Origer (1987) and EHT value from vicinity of Santa Rosa, Sonoma County

Ethnography

Linguists and ethnographers tracing the evolution of languages have found that most of the indigenous languages of the California region belong to one of five widespread North American language groups (the Hokan and Penutian phyla, and the Uto-Aztecan, Algic, and Athabaskan language families). The distribution and internal diversity of four of these groups suggest that their original centers of dispersal were outside, or peripheral to, the core territory of California, that is, the Central Valley, the Sierra Nevada, the Coast Range from Cape Mendocino to Point Conception, and the Southern California coast and islands. Only languages of the Hokan phylum can plausibly be traced back to populations inhabiting parts of this core region during the Archaic period, and there are hints of connections between certain branches of Hokan, such as that between Salinan and Seri, that suggest that at least some of the Hokan languages could have been brought into California by later immigrants, primarily from the Southwest and northwestern Mexico (Golla 2011).

At the time of European settlement, the study area was included in the territory controlled by the Coast Miwok (Kelly 1978:414). The Coast Miwok were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures (Barrett 1908; Kroeber 1925). They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied throughout the year, and other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant.

History

Historically, the study area is within the Rancho Las Baulines granted to Gregorio Briones in 1846. When granted, it consisted of 8,911 acres that extended around the Bolinas Lagoon and encompassed modern day Bolinas (GLO 1858; Cowan 1977:18).

In 1852, a New England Sea Captain by the name of Isaac A. Morgan purchased the easterly portion of the Rancho Las Baulines and set up his own ranch, calling it Belvidere Ranch. After owning this land for approximately 18 years, he eventually sold to Nathan H. Stinson in 1870, who used it to set up a resort with tents, running water, and a dance floor. The land soon became known as Willow Camp, a name derived from the willow trees present on the beach.

In 1905 Archie D. Upton, Stinson's stepson, offered improvements to Willow Camp including a private water system, more modern sanitation, and even a telephone. This led to the camp being renamed Camp Upton. In 1906 Upton filed the first subdivision map for the town of Stinson Beach under his stepfather's name. In 1916 when the first post office opened the name stuck (Teather 1986: 75).

Historic period site indicators generally include fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

STUDY PROCEDURES AND FINDINGS

Native American Contact

A request was sent to the State of California's Native American Heritage Commission (NAHC) seeking information from the Sacred Lands File and the names of Native American individuals and groups that would be appropriate to contact regarding this project. Letters were also sent to the following groups:

Federated Indians of Graton Rancheria

This contact does not constitute consultation with tribes, but informs them of our involvement with the project.

Native American Contact Results

The Federated Indians of Graton Rancheria responded on July 18, 2019 requesting to be provide with the results of our research and recommendations.

No other response has been received as of the date of this report. A log of contact efforts is appended to this report, along with copies of correspondence (see Appendix A).

Archival Research Procedures

Archival research included examination of the library and project files at Tom Origer & Associates. This research is meant to assess the potential to encounter archaeological sites and built environment within the study area. Research was also completed to determine the potential for buried archaeological deposits.

A review (NWIC File No. 19-0069) was completed of the archaeological site base maps and records, survey reports, and other materials on file at the Northwest Information Center (NWIC), Sonoma State University, Rohnert Park by Eileen Barrow on July 10, 2019. Sources of information included but were not limited to the current listings of properties on the National Register of Historic Places, California Historical Landmarks, California Register of Historical Resources, and California Points of Historical Interest as listed in the OHP's *Historic Property Directory* (2012).

The OHP has determined that structures in excess of 45 years of age could be important historical resources, and former building and structure locations could be important archaeological sites. Archival research included an examination of 19th and 20th century maps and aerial photographs to gain insight into the nature and extent of historical development in the general vicinity, and especially within the study area.

Ethnographic literature that describes appropriate Native American groups, county histories, and other primary and secondary sources were reviewed. Sources reviewed are listed in the "Materials Consulted" section of this report.

A model for predicting a location's sensitivity for buried archaeological sites was formulated by Byrd *et al.* (2017) based on the age of the landform, slope, and proximity to water. A location is considered to have highest sensitivity if the landform dates to the Holocene, has a slope of five percent or less, is within 150 meters of fresh water, and 150 meters of a confluence. Note: the Holocene Epoch is the

current period of geologic time, which began about 11,700 years ago, and coincides with the emergence of human occupation of the area. A basic premise of the model is that archaeological deposits will not be buried within landforms that predate human colonization of the area. Calculating these factors using the buried site model (Byrd *et al.* 2017:Tables 11 and 12), a location’s sensitivity will be scored on a scale of 1-10 and classed as follows: lowest (<1); low (1-3); moderate (3-5.5); high (5.5-7.5); highest (>7.5).

Archival Research Findings

Archival research found that the study area had not been previously subjected to a cultural resources study. Ten studies have been conducted within a quarter mile of the study area (Table 2). There are no resources within a quarter mile of the study area.

Table 2. Studies within a Quarter-mile of the Study Area

Author	Date	S#
Bieling	1996	18026
Bryne	1992	14273
Chavez	2003	27283
Historic Resource Association	2006a	32576
Historic Resource Association	2006b	32577
Loyd	2012	40907
Mayer	1992	47489
Mayer	1993	50290
Mayer	1994	18628
Spillane	2014	46397

There are no reported ethnographic sites within one mile of the study area (Barrett 1908; Kroeber 1925).

A review of 19th and 20th century maps shows one building within the study area as early as 1941 (Dodge, 1892; Whitney 1873; GLO 1859; USACE 1941; USGS 1897, 1950a, 1950b, 1954, 1971). Presently, there are no buildings within the study area.

Based on landform age, our analysis of the environmental setting, and incorporating Meyer and Kaijankoski (2017) analysis of sensitivity for buried sites, there is a low potential (~3) for buried archaeological site indicators within the study area. The geology of the study area consists of Quaternary Period beach and dune sand mixed with artificial fill. The Quaternary Period dates from approximately 2.5 million years ago to present. The earliest evidence of human arrival and habitation in California dates to 11,000 years ago, and while this is still a part of the Quaternary Period, it represents a very miniscule portion of the Quaternary Period as a whole, and, as such, is unlikely to contain buried archaeological site indicators.

Field Survey Procedures

An intensive field survey of the parcel was completed by Nelson “Scotty” Thompson on July 9, 2019. One hour was spent in the field. Ground visibility ranged from excellent to poor, with vegetation being the primary hindrances. Approximately one third of the parcel was covered in low growing vegetation

(see fig). A hand-held hoe was used to clear patches of vegetation, as needed, to inspect the ground surface.

Field Survey Findings

Archaeology

No archaeological site indicators were observed during the field survey.

Built Environment

The remnants of a mortared stone chimney were found within the study area. This is all that remains of the former building on the property.

DISCUSSION AND RECOMMENDATIONS

Field survey found no archaeological sites within the study area. Application of buried sites model indicates that there is a low potential (~3) for buried resources. The geology of the study area consists of Quaternary Period beach and dune sand mixed with artificial fill. The earliest evidence of human arrival and habitation in California dates to 11,000 years ago, and while this is still a part of the Quaternary Period, it represents a very miniscule portion of the Quaternary Period as a whole.

Presently, there are no standing structures in the study area. The only remnant of the previous residence is a mortared chimney in the northwest corner of the study area.

Archaeological Recommendations

No archaeological site indicators were identified during the field survey; therefore, no recommendations are warranted.

Built Environment Recommendations

There are no buildings within the study area; therefore, no recommendations are warranted.

Accidental Discovery

In keeping with the CEQA guidelines, if archaeological remains are uncovered, work at the place of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5 [f]). Prehistoric archaeological site indicators include: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire-affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

The following actions are promulgated in the CEQA Guidelines Section 15064.5(d) and pertain to the discovery of human remains. If human remains are encountered, excavation or disturbance of the location must be halted in the vicinity of the find, and the county coroner contacted. If the coroner determines the remains are Native American, the coroner will contact the NAHC. The NAHC will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations regarding the treatment of the remains with appropriate dignity.

SUMMARY

Tom Origer & Associates completed a cultural resources study of the property at 21 Calle del Onda, Marin County, California. The study was requested by Audrey Smith of WRA, Inc. and authorized by Justin Semion of WRA Inc. This study was conducted in compliance with the requirements of Stinson Beach County Water District and with CEQA requirements. No cultural resources were found within the study area and therefore no resource-specific recommendations are warranted. Documentation pertaining to this study is on file at the offices of Tom Origer & Associates (File No. 2019-061).

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APPENDIX A

Native American Contact

Copies of Correspondence

Native American Contact Efforts
21 Calle del Onda Wastewater System Project, Stinson Beach, Marin County

Organization	Contact	Action	Results
Native American Heritage Commission		Email 7/12/19	No response received as of the date of this report.
Federated Indians of Graton Rancheria	Gene Buvelot Buffy McQuillen Greg Sarris	Letter 7/12/19	A response was received on July 18, 2019 requesting to be provide with the results of our research and recommendations.

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION

1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: 21 Calle del Onda Wastewater System Project

County: Marin

USGS Quadrangles

Name: Bolinas

Township 1N Range 7W Section(s) Rancho Las Bolinas MDBM

Date: July 12, 2019

Company/Firm/Agency: Tom Origer & Associates

Contact Person: Taylor Alshuth

Address: PO Box 1531

City: Rohnert Park

Zip: 94927

Phone: (707) 584-8200

Fax: (707) 584-8300

Email: taylor@origer.com

Project Description:

The project area is approximately 0.35 acres. The 21 Calle del Onda Wastewater System Project is a project to replace the current wastewater system with a new 2,000-gallon septic tank, a 2,000-gallon dual compartment sump tank, and put in sub-grade concrete retaining wall.

Tom Origer & Associates

Archaeology / Historical Research

July 11, 2019

Greg Sarris
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

Re: 21 Calle del Onda Wastewater System Project

Dear Mr. Sarris:

I write to notify you of a proposed project within Marin County, for which our firm is conducting a cultural resources study. This notification does not constitute consultation. The 21 Calle del Onda Wastewater System Project is a project to replace the current wastewater system with a new 2,000-gallon septic tank, a 2,000-gallon dual compartment sump tank, and put in sub-grade concrete retaining wall at 21 Calle del Onda, Stinson Beach, Marin County. Stinson Beach County Water District is reviewing the project for CEQA compliance.

Enclosed is a portion of the Bolinas, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Taylor Alshuth
Associate

Tom Origer & Associates

Archaeology / Historical Research

July 11, 2019

Buffy McQuillen
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

Re: 21 Calle del Onda Wastewater System Project

Dear Ms. McQuillen:

I write to notify you of a proposed project within Marin County, for which our firm is conducting a cultural resources study. This notification does not constitute consultation. The 21 Calle del Onda Wastewater System Project is a project to replace the current wastewater system with a new 2,000-gallon septic tank, a 2,000-gallon dual compartment sump tank, and put in sub-grade concrete retaining wall at 21 Calle del Onda, Stinson Beach, Marin County. Stinson Beach County Water District is reviewing the project for CEQA compliance.

Enclosed is a portion of the Bolinas, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Taylor Alshuth
Associate

Tom Origer & Associates

Archaeology / Historical Research

July 11, 2019

Gene Buvelot
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928

Re: 21 Calle del Onda Wastewater System Project

Dear Mr. Buvelot:

I write to notify you of a proposed project within Marin County, for which our firm is conducting a cultural resources study. This notification does not constitute consultation. The 21 Calle del Onda Wastewater System Project is a project to replace the current wastewater system with a new 2,000-gallon septic tank, a 2,000-gallon dual compartment sump tank, and put in sub-grade concrete retaining wall at 21 Calle del Onda, Stinson Beach, Marin County. Stinson Beach County Water District is reviewing the project for CEQA compliance.

Enclosed is a portion of the Bolinas, Calif. 7.5' USGS topographic quadrangle showing the project location.

Sincerely,



Taylor Alshuth
Associate

taylor@origer.com

From: THPO@gratonrancheria.com
Sent: Thursday, July 18, 2019 4:31 PM
To: 'Taylor Alshuth (Taylor@origer.com)'
Subject: 21 Calle del Onda Wastewater System Project

Dear Taylor,

Thank you for your outreach and request for identification of cultural resources from the Federated Indians of Graton Rancheria. The project area identified in your correspondence is within the Tribe's ancestral territory and there may be tribal cultural resource impacts. Please provide the Tribe with the results of your research efforts and recommendations. The information can be emailed or mailed to the following address.

Buffy McQuillen
Tribal Heritage Preservation Officer (THPO) Native American Graves Protection and Repatriation Act (NAGPRA)
Office: 707.566.2288; ext. 137
Cell: 707.318.0485
FAX: 707.566.2291

Hector Garcia
THPO Administrative Assistant II
Federated Indians of Graton Rancheria
6400 Redwood Drive, Suite 300
Rohnert Park, CA 94928
Office: 707.566.2288, ext. 138
Fax: 707.588-9809
Email: hgarciagratonrancheria.com<<mailto:hgarciagratonrancheria.com>>
www.gratonrancheria.com<<http://www.gratonrancheria.com>>

Please consider our environment before printing this email.

Federated Indians of Graton Rancheria and Tribal TANF of Sonoma & Marin - Proprietary and Confidential
CONFIDENTIALITY NOTICE: This transmittal is a confidential communication or may otherwise be privileged. If you are not the intended recipient, you are hereby notified that you have received this transmittal in error and that any review, dissemination, distribution or copying of this transmittal is strictly prohibited. If you have received this communication in error, please notify this office at 707-566-2288, and immediately delete this message and all its attachments, if any. Thank you.

Appendix C: Coastal Engineering Analysis

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June 13, 2016

Mr. Craig Nunes
554 View Street
Mountain View, CA 94041

Re: Coastal Engineering Analysis
For 21 Calle Del Onda, Stinson Beach, CA
Assessor's Parcel No. 195-162-49

RECEIVED

JUN 16 2016

COUNTY OF MARIN
COMMUNITY DEVELOPMENT AGENCY
PLANNING DIVISION

RECEIVED

JUN 17 2016

STINSON BEACH COUNTY
WATER DISTRICT

Dear Mr. Nunes:

This letter report presents the results of our coastal engineering analysis for your proposed residence located at 21 Calle del Onda in Stinson Beach (APN: 195-162-49). Our scope of services included data collection & processing, engineering analyses (to include erosion analysis, flood hazard & wave uprush analysis, and mapping of the results), and preparation of a report that documents our analyses and mapping of results. The purpose of this analysis is to respond to the California Coastal Commission letter dated March 31, 2016 regarding "Shoreline Protection and Hazard Areas".

SITE CONDITION

The proposed residence is a new 2,154 square-foot single-family residence with an attached 330 square-foot one-car garage, in addition to new site improvements, including a septic system, driveway and boardwalk, located at 21 Calle Del Onda in Stinson Beach (APN: 195-162-49) as shown in Figure 1. This lot was previously developed with a house, that was destroyed by a fire. A topographic survey was conducted for this project site by L.A. Stevens & Associates, Inc. on July 17, 2015. The topographic survey, overlain with the site plan for the proposed development, is shown in Figure 2. The typical beach profile, which was derived from this July 17, 2015 survey, is shown in Figure 3.

SEA LEVEL RISE

Based on the National Research Council’s (NRC) 2012 report¹ on sea level rise (SLR) for the coasts of California, Oregon and Washington, the Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT) developed a SLR guidance² to advise California in planning efforts. Using the range of SLR presented in the NRC (2012) report, CO-CAT selected SLR values based on agency and context-specific considerations of risk tolerance and adaptive capacity. These SLR projections were unanimously adopted for use by the California Coastal Commission on August 12, 2015³. The SLR predictions for the project site are listed in Table 1.

Table 1. Sea Level Rise Projections

Time Period	By 2030	By 2050	By 2100
Sea Level Rise From 2000	2-12 inches (4-30 cm)	5-24 inches (12-61 cm)	17-66 inches (42-167 cm)

The proposed residential development is expected to have an economical lifespan of approximately 50 years. It is therefore reasonable to consider a SLR in the next 50 years. Using third degree polynomial curves to fit the range of the SLR projections as listed in Table 1, the SLR estimated for various periods is summarized in Table 2. The SLR estimated in the next 50 years (from 2016 to 2066) is 7.5-30.2 inches (0.6-2.5 feet).

Table 2. Sea Level Rise Estimates for Various Periods

Time Period	SLR
2000 - 2016	0.7-5.5 inches
2000 - 2066	8.2-35.7 inches
2000 - 2091	14.5-57.3 inches
In 50 years (2016-2066)	7.5-30.2 inches (0.6-2.5 feet)
In 75 years (2016 – 2091)	13.8-51.8 inches (1.2-4.3 feet)

¹ National Research Council (NRC), 2012. Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future (2012). http://www.nap.edu/catalog.php?record_id=13389.

² CO-CAT, 2013. State of California Sea-Level Rise Guidance Document, March 2013 update.

³ California Coastal Commission, 2015. California Coastal Commission, Sea Level Rise Policy Guidance, unanimously adopted on August 12, 2015.

Mr. Craig Nunes,
554 View Street, Mountain View, CA 94041
June 13, 2016
Page 3

SHORELINE EROSION IN RESPONSE TO SEA LEVEL RISE

The shoreline recession in response to SLR was estimated using the Bruun Rule (1962)⁴. This theory has been widely applied by the engineering and scientific communities to provide a first approximation of the potential shoreline retreat caused by rising sea levels. Assuming all sand removed from the upper portion of the beach profile is deposited offshore as sea level rises, the Bruun Rule (1962) provides a relationship to estimate shoreline retreat as a function of sea level rise and beach profile characteristics. The Bruun Rule equation is:

$$R = S \frac{W_b}{(h_c + B)}$$

where R is the shoreline recession distance, S is the sea level rise, W_b is the horizontal dimension of the active zone of the beach profile, h_c is the depth of closure, and B is berm height above the sea level. Using this formula, the shoreline recession distances in response to various SLRs are summarized in Table 3. The shoreline erosion distance in the next 50 years will range between 20 feet to 80 feet, depending on the future SLR. The corresponding eroded beach profiles, compared to the existing (surveyed) profile, are illustrated in Figure 3.

Table 3. Shoreline Recession Distances in Response to Sea Level Rise

Time Period	Sea level rise (feet)	Shoreline recession distance (feet)
In 50 years (2016-2066)	0.6-2.5	20-80
In 75 years (2016-2091)	1.2-4.3	40-130

CURRENT (2016) COASTAL FLOOD ELEVATION

Currently a base flood elevation (BFE) of 26 feet, NAVD88 is listed in the effective Flood Insurance Rate Map (FIRM) for the proposed residence location. This FIRM was prepared by the Federal Emergency Management Agency (FEMA), with the effective date of May 4, 2009. However, an updated coastal flooding analysis was conducted by FEMA for Marin County in 2015. The results are summarized in the preliminary Flood Insurance Study (FIS)⁵ dated July 29, 2015, with an updated preliminary FIRM.

⁴ Bruun, P. (1962), "Sea-level rise as a cause of shore erosion," Journal of Waterways and Harbors Division, Vol. 88 (1-3), 117-130.

⁵ FEMA (2015), *Flood Insurance Study, Marin County, California and Incorporated Areas*, Prepared by Federal Emergency Management Agency, Preliminary, July 29, 2015.

In this updated FIS, storm surge, swell, and locally generated wind waves were modeled on a regional scale using numerical models to deterministically predict water levels and wave conditions for the Pacific Ocean along the coastline of Marin County that is exposed to the open ocean. These data were then used as inputs in a 1-dimensional, transect-based analysis to determine the coastal flooding hazards onshore.

The SHELF model developed by the Scripps Institution of Oceanography was used for the regional surge and wave modeling. This hydrodynamic model included the effects of storm surge, wave effects, and other phenomena such as El Niño and La Niña conditions. The SHELF model produced a hindcast of hourly wave conditions for a 50-year period extending from January 1, 1960 through December 31, 2009. Hourly water levels were obtained from NOAA tide gauges and were paired with the SHELF model waves to analyze the coastal hazards at the shoreline. The frequency and magnitude of storm surge was derived statistically from the 50-year hindcast record.

Tidal elevation data for tide stations along the California coast were obtained from the NOAA's National Ocean Service (NOS). Temporal gaps in the records were filled using an approach that applied the relationships of observed tidal residuals between neighboring gauges to estimate residual components at stations with missing data. Using these correlations and an understanding of the spatial variability of regional storms, the gaps in gauge records were empirically reconstructed to provide a continuous hourly time series of still water levels for the desired period of record at each tide gauge. Once the hourly still water level hindcast was reconstructed for each tide gauge, each tide gauge was assigned the coastal reach for which it was considered to be most representative for the still water levels.

Extreme Still Water Level

Based on the statistical analysis, the extreme still water level (SWL) was computed for various return frequencies, and the results were summarized in Table 11 of the FEMA's (2015) FIS. The SWL at the project site is represented by that determined for the Point Reyes tide gauge. According to this FIS, the 1-percent annual chance (100-year) SWL is +9.1 feet, NAVD88. Based on the National Oceanic and Atmospheric Administration's (NOAA) tidal datums for Point Reyes, the Mean Higher High Water (MHHW) is: +5.74 feet, NAVD88, and the highest observed water level (02/06/1988) is: +8.52 feet, NAVD88. The FEMA's 100-year SWL is approximately 0.6 foot higher than the highest observed water level. To be conservative, the extreme SWL used in this analysis is: +9.1 feet, NAVD88.

Wave Runup Elevation

Water level and wave information from the tide gauge analysis and the SHELF model were used in FEMA's (2015) FIS as inputs to the 1-dimensional onshore flood hazard analyses. Wave setup, runup, overtopping, event-based erosion, and overland wave propagation were analyzed, where appropriate, at transects placed along the coastline.

Wave runup was calculated using one of three methods, depending upon the dynamic water level relative to the profile and the shoreline slope. As recommended in FEMA's Pacific Guidelines, the Direct Integration Method (DIM) was used to calculate runup for transects with natural, gently sloping profiles. The Technical Advisory Committee for Water Retaining Structures (TAW) method⁶ was used for shorelines with shore protection structures and steeply sloping natural shorelines where the dynamic water level (DWL) exceeded the toe of the structure or bluff. If, for these shorelines, the DWL did not reach the toe of the structure or bluff face, the DIM was used for gently sloping profiles while a modified TAW approach was implemented on steeper shorelines. The Shore Protection Manual method⁷ (USACE, 1984) was used to calculate wave runup on vertical walls.

The total runup, including wave setup and incident wave runup, was added to the SWL to determine the total water level (TWL). Annual TWL maxima were selected from the 50-year hindcast (1960-2009). The generalized extreme value statistical distribution was employed to calculate the 1-percent-annual-chance TWL at each transect, and the results are listed in Table 13 of FEMA's (2015) FIS. Based on this table, the total water level (the wave runup elevation or the flood elevation) at the project site (represented by Transect P58) is: +15.6 feet, NAVD88 for the 1% annual chance event. In other words, the 100-year flood elevation, or the Base Flood Elevation (BFE), at the project site is: +15.6 feet, NAVD88.

COASTAL FLOOD ELEVATION IN 50 YEARS (2066)

The wave runup (the vertical distance between the wave runup elevation and the SWL) is mainly a function of the incident wave condition and the beach condition, such as the roughness and the slopes of the beach profile (between the wave breaking point and the wave runup limit). As discussed under the Sea Level Rise section of this letter report, the SLR estimated for the next 50 years (from 2016 to 2066) is approximately 0.6-2.5 feet. For the same offshore wave condition, our analysis indicates that the wave runup virtually shows no difference whether this SLR is

⁶ Van der Meer, J.W. (2002), *Wave Run-up and Overtopping at Dikes*, Technical Report. Technical Advisory Committee for Water Retaining Structures (TAW), Delft, The Netherlands.

⁷ U. S. Army Corps of Engineers (1984), *Shore Protection Manual*, Volumes 1-3.

considered or not. The wave runup elevation is the still water level (SWL) added to the wave runup. Therefore, the SLR will impact the wave runup elevation mainly by elevating the SWL. Considering a SLR of 0.6-2.5 feet, the 1-percent annual chance (100-year) SWL in 50 years (2066) is approximately 9.7-11.6 feet, NAVD88, and the 1-percent annual chance (100-year) wave runup elevation, or the 100-year flood elevation is approximately 16.2-18.1 feet, NAVD88.

SUMMARY OF COASTAL FLOOD HAZARD

The extreme water levels at the project site are summarized in Table 4. If the elevation of the lowest floor’s horizontal member is designed at +18.1 feet, NAVD88 or higher, the proposed residence will be higher than the 100-year SWL (10.3-13.4 feet, NAVD88) in 75 years (2091), and be above the 100-year flood elevation (16.2-18.1 feet, NAVD88) in 50 years (2066).

Table 4. Water Level (Feet, NAVD88) Summary

Mean Higher High Water (MHHW)	5.74
Highest Observed Water Level (02/06/98)	8.52
100-Year SWL	
Current (2016)	9.1
In 50 years (2066), with SLR = 0.6' - 2.5'	9.7 - 11.6
In 75 years (2091), with SLR = 1.2' - 4.3'	10.3 - 13.4
100-Year Flood Elevation	
Current (2016)	15.6
In 50 years (2066), with SLR = 0.6' - 2.5'	16.2 - 18.1
In 75 years (2091), with SLR = 1.2' - 4.3'	16.8 - 19.9
Elevation of the Lowest Floor’s Horizontal Member	18.1

Figure 4 shows the representative beach profiles with the MHHW water lines. Figure 5 shows the beach profiles with the 100-year SWLs. Figure 6 shows the beach profiles with the 100-year flood elevations. Both the current (2016) condition and the condition in 50 years (2066) after considering SLR are shown in these figures. As indicated in Figure 6, part of the ground under the proposed residence will be inundated under the current condition, and part of, or the entire ground under the proposed residence will be inundated in 50 years after considering the future SLR. However, the proposed pile-supported residence will be above the current 100-year flood elevation, and the flood elevation in the next 50 years.

Figure 7 shows the map for the current MHHW water line and the variation in range of the future MHHW line in 50 years in relation to the proposed residence. Figure 8 shows the map for the current 100-year SWL water line and the variation in range of the 100-year SWL water line in 50 years. Figure 9 shows the map for the current 100-year flood inundation boundary, and the variation in range of the future inundation boundary in 50 years. As shown in Figure 7, the proposed residence is approximately 240 feet landward of the current MHHW line, and approximately 90 to 210 feet landward from the MHHW line in 50 years. As shown in Figure 9, part of the ground underneath the proposed pile-supported residence will be inundated under the current 100-year storm event, and part of, or the entire ground under the proposed residence will be inundated in 50 years after considering the future SLR. As a reference, Figure 10 shows an enlarged view of the FEMA (2015) Preliminary Flood Insurance Rate Map (FIRM), dated July 29, 2015, for the project site. This FIRM shows a similar coastal flood inundation boundary as the current inundation boundary plotted in Figure 9.

WAVE ACTION ON SEPTIC SYSTEM

A septic system is proposed on the back side (landward) of the lot. The location of this septic system is shown in Figure 11. It is noted that this septic system is behind (landward of) the sand berm with a top elevation of approximately +17 feet, NAVD88. Under the current condition, the 100-year flood elevation (+15.6 feet, NAVD88) will not overtop this berm. Therefore, the septic system behind this berm will not experience coastal flooding hazard under the current condition. The 100-year flood elevation in 50 years (with SLR) may vary between +16.2 and +18.1 feet, NAVD 88. The sand berm will be overtopped if the flood elevation exceeds the top of the term. Therefore, it is possible that the septic system will be inundated in 50 years by the water that overtops the berm. However, it will not be directly exposed to wave action from the ocean. In other words, the proposed septic system will not be subjected to coastal flooding under the current condition; however it may be subjected to coastal flooding in 50 years, but virtually without experiencing wave action or wave force.

* * * * *

We appreciate the opportunity to perform this coastal engineering analysis and prepare this report of our results for your proposed new residence at 21 Calle Del Onada in Stinson Beach. Please contact us if you should have any questions regarding our findings.

NOBLE CONSULTANTS, INC.

Mr. Craig Nunes,
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Sincerely,

NOBLE CONSULTANTS, INC.



Ronald M. Noble, P.E., D.CE, D.PE, D.WRE
President



Wenkai Qin, Ph.D., P.E., D.CE
Manager, Coastal/Water Resources Analysis

RMN/ WQ

Attachments: (Figures 1 through 11)



Source: Google Earth

Figure 1. Location of Proposed Development (Red Box)

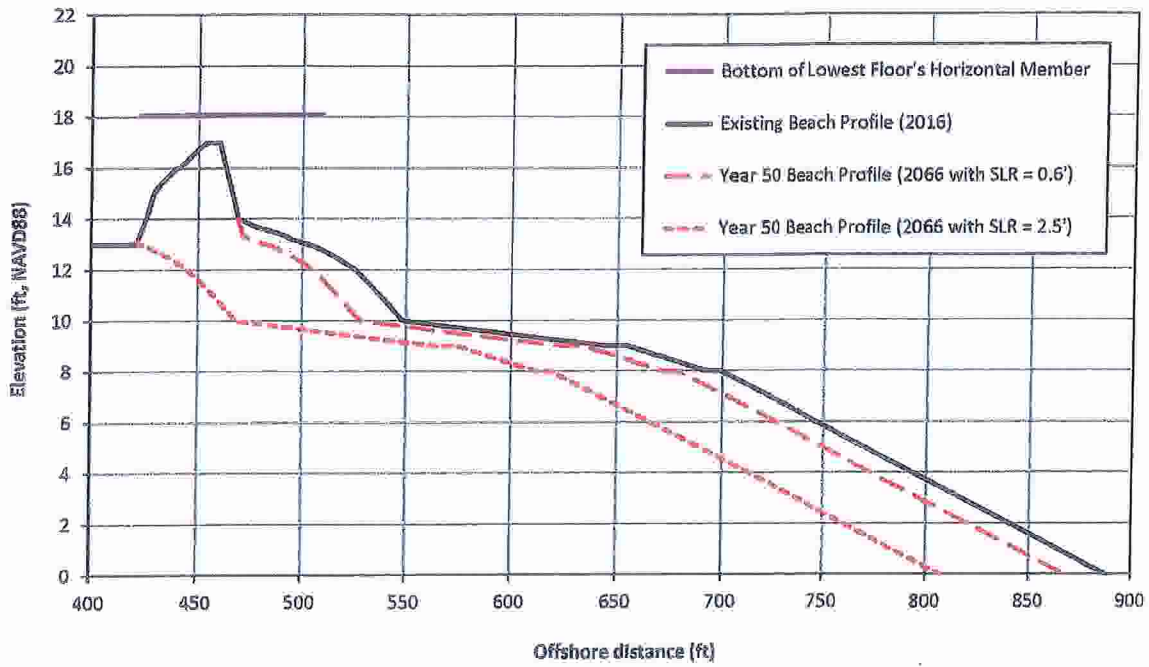


Figure 3. Eroded Beach Profile in Response to Sea Level Rise

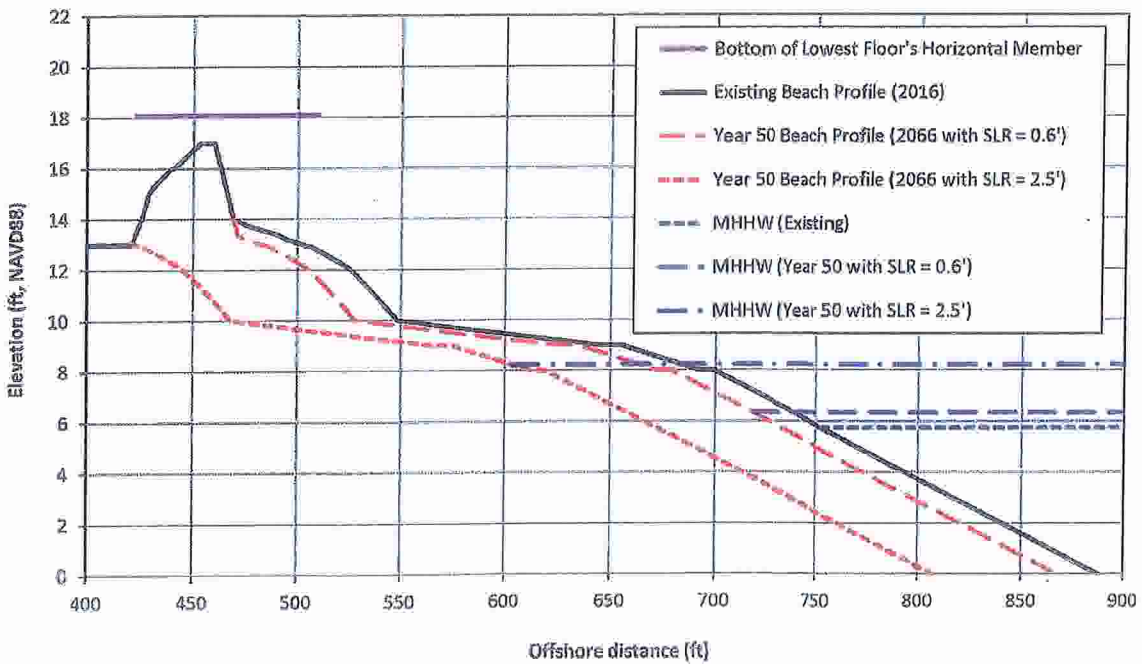


Figure 4. Mean Higher High Water (MHHW) Level

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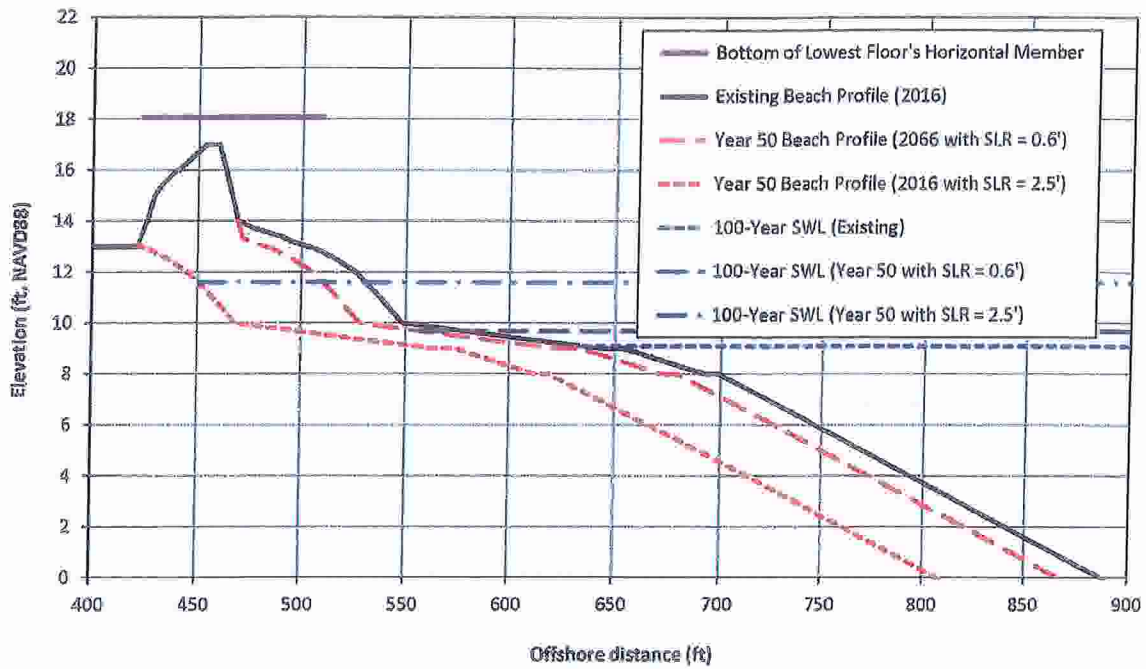


Figure 5. 100-Year Still Water Level

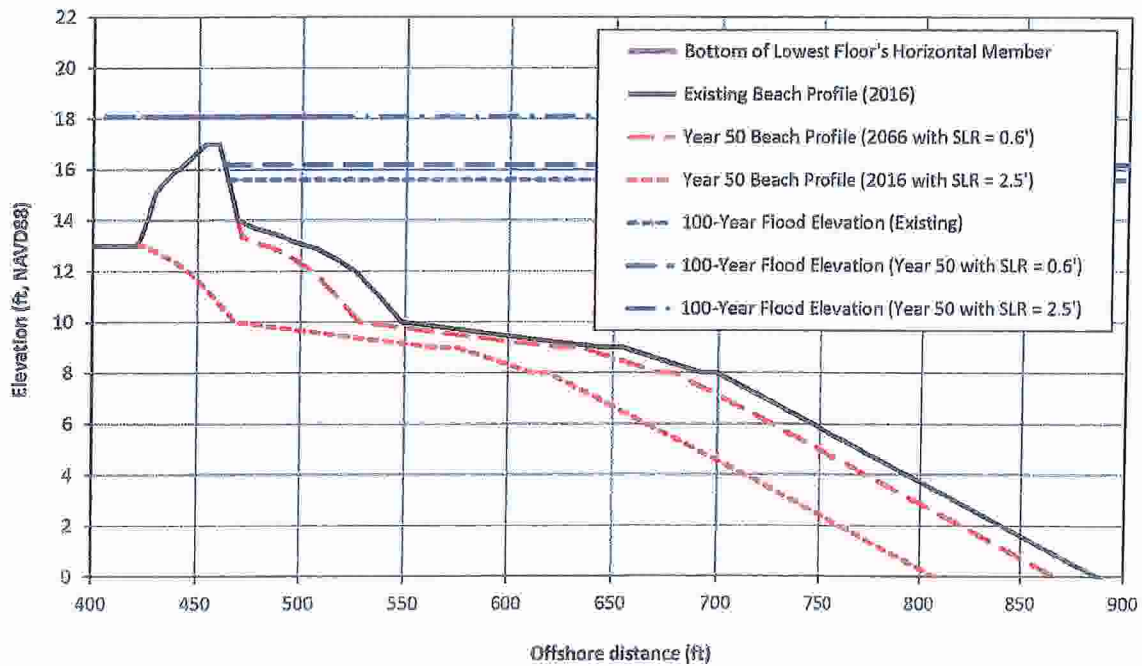


Figure 6. 100-Year Flood Elevation (Wave Runup Elevation)

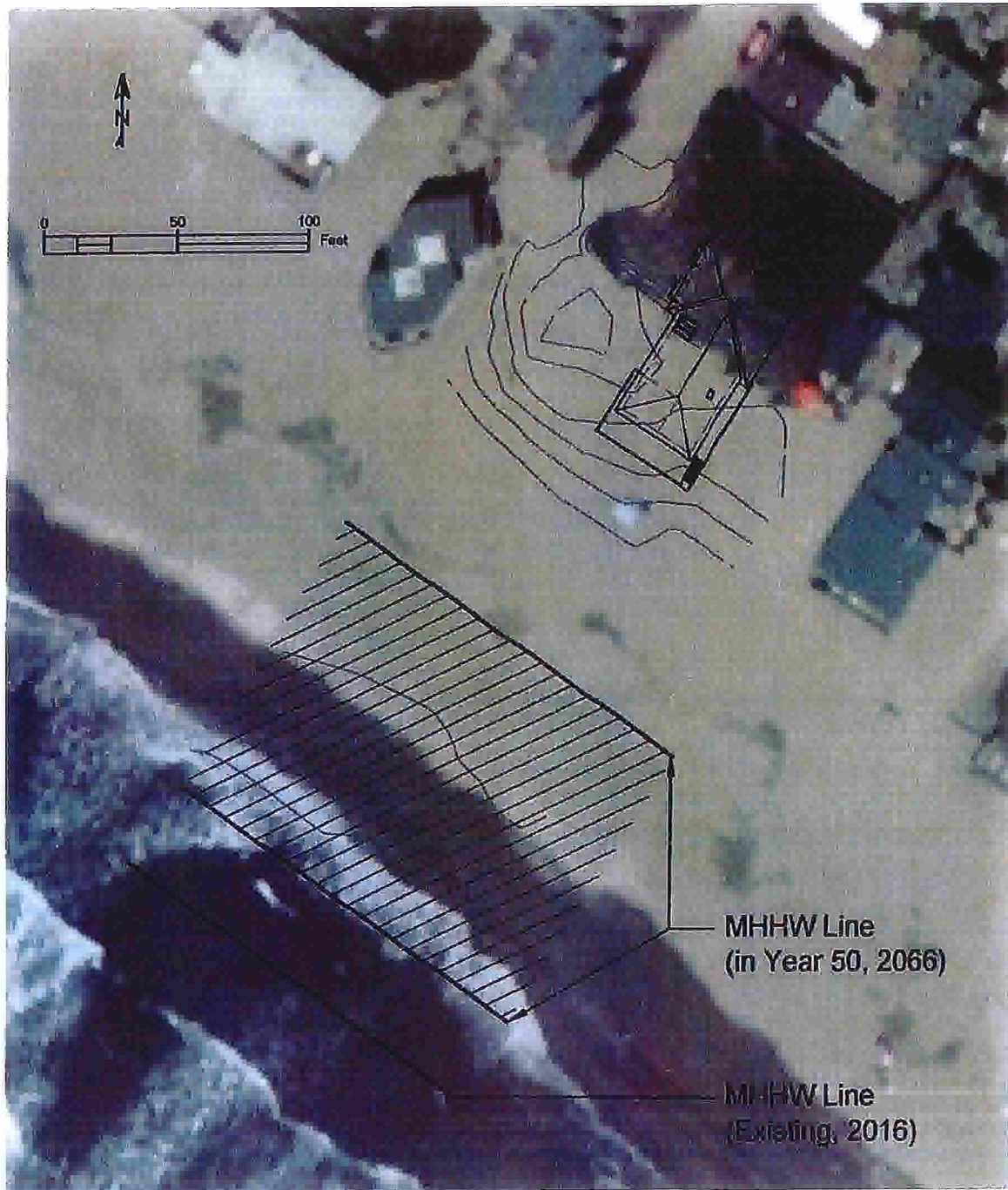


Figure 7. Existing and Future Mean Higher High Water (MHHW) Lines

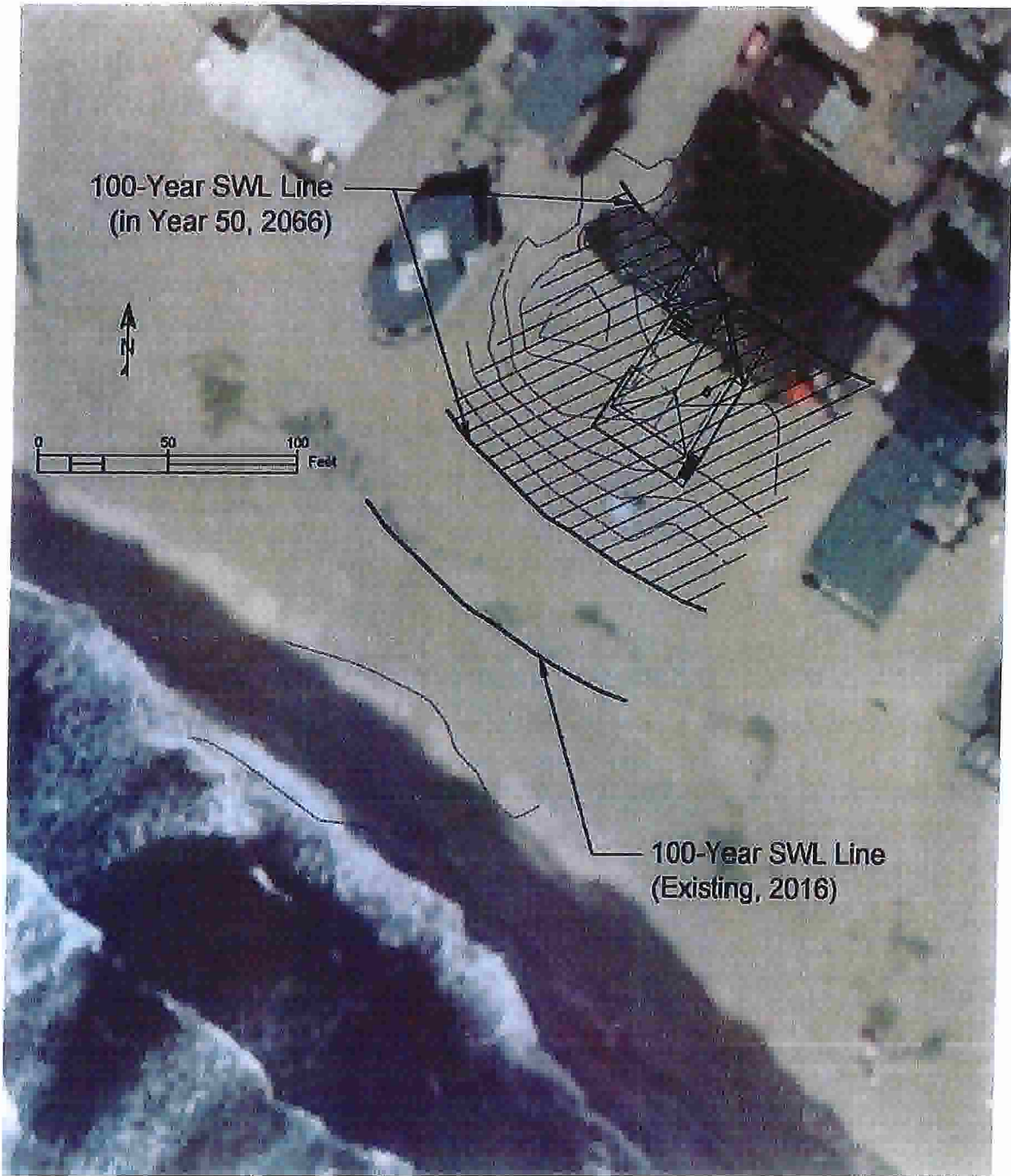


Figure 8. Existing and Future 100-Year Still Water Level Lines

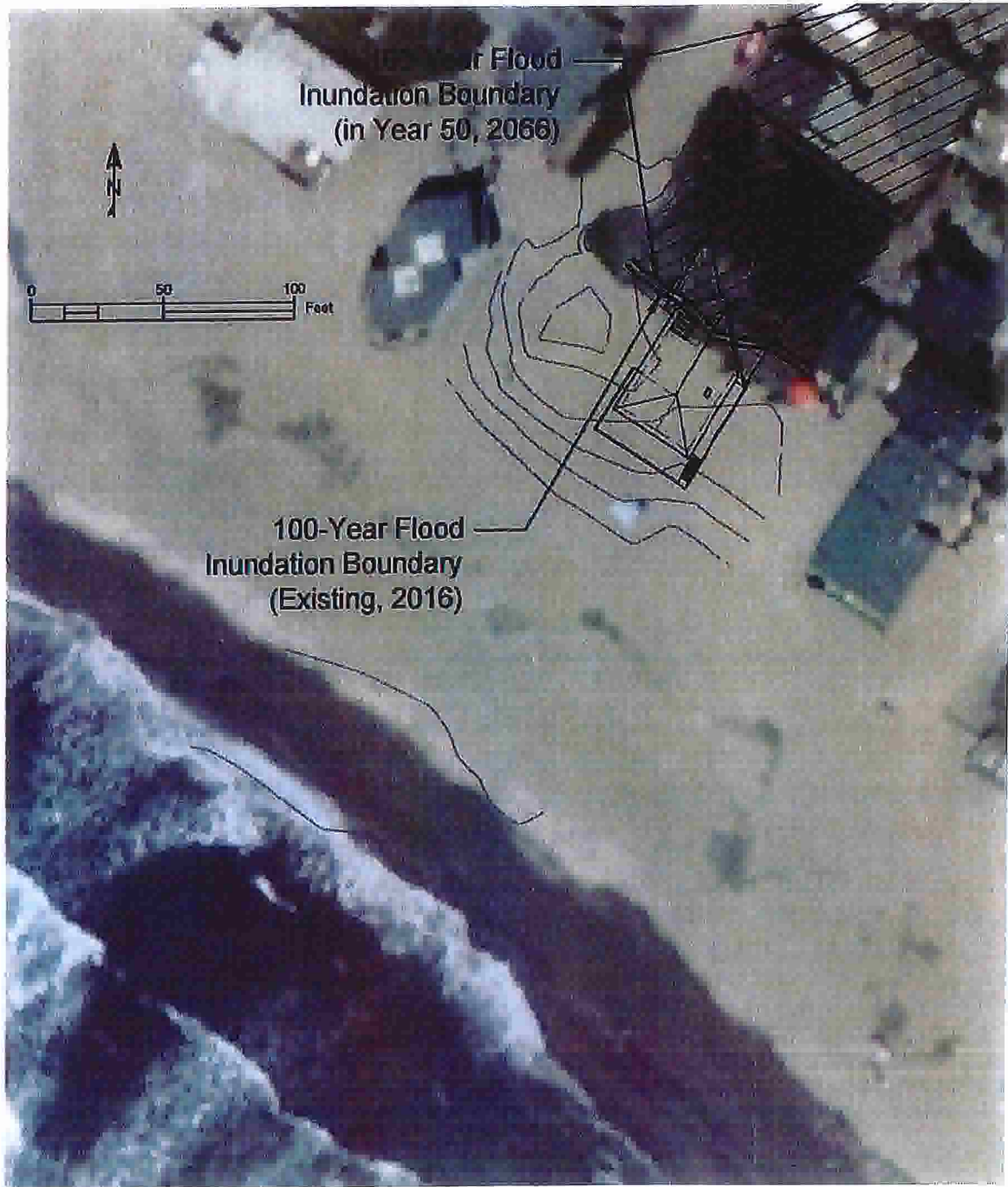


Figure 9. Existing and Future 100-Year Flood Inundation Boundaries

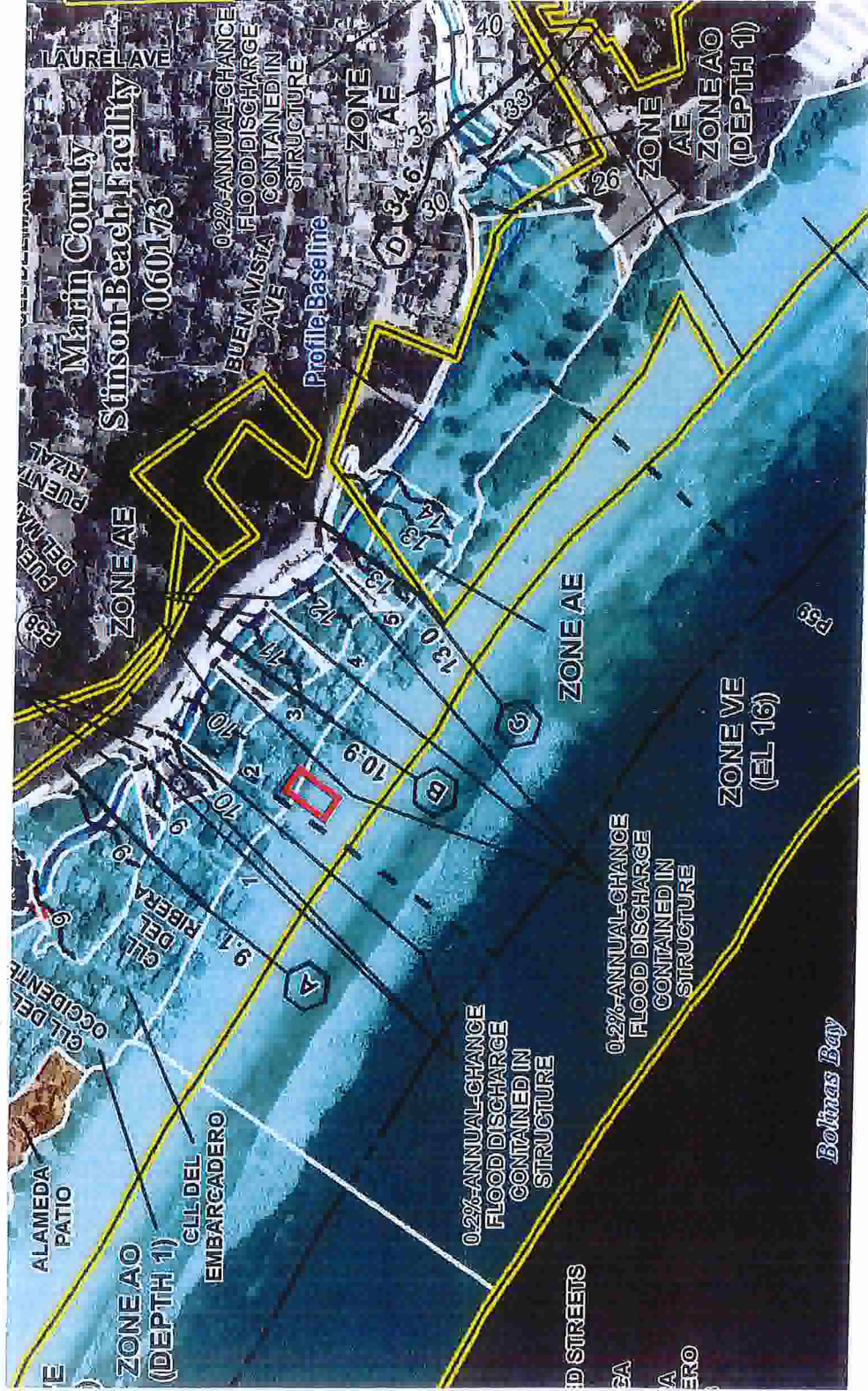


Figure 10. Enlarged View of FEMA (2015) Preliminary Flood Insurance Rate Map (July 29, 2015) for Project Site (Red Box)

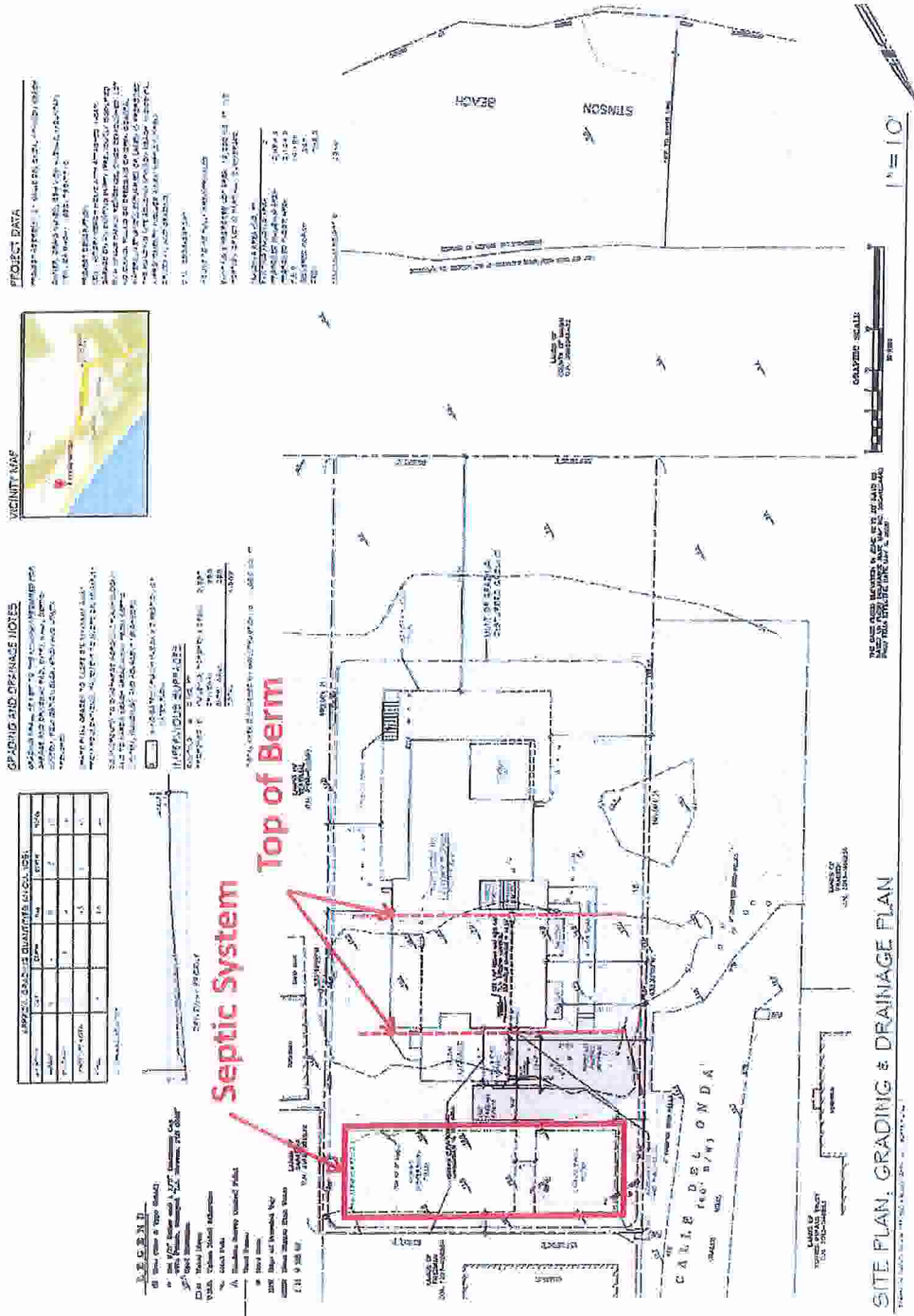


Figure 11. Location of Proposed Septic System Location with Relation to Sand Berm

Appendix D: Mitigation Monitoring Reporting Program

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APPENDIX D: MITIGATION MONITORING AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared pursuant to CEQA Guidelines (California Code of Regulations, Title 14), which state the following:

In order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented, the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program.

The public 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.

Table 1 lists the potentially significant impacts and proposed mitigation measures identified in the Initial Study/Mitigated Negative Declaration (IS/MND). Table 1 describes the timing of implementation of the mitigation measures (i.e., when the measure will implemented) and District staff or individual responsible for ensuring implementation of the measures. Finally, Table 1 describes the District staff or individual responsibility for monitoring the mitigation measures.

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Table 1. Mitigation Monitoring and Reporting Program (MMRP)

Environmental Impact	Mitigation Measures	Implementation Responsibility & Timing	Monitoring Responsibility	Performance Objective
Air Quality				
<p>Impact AIR- c Would the project expose sensitive receptors to substantial pollutant concentrations?</p> <p>Significance of Impact Before Mitigation: Potentially Significant</p> <p>Significance of Impact After Mitigation: Less than Significant</p>	<p><i>Mitigation Measure AIR-1</i></p> <p>Throughout the wastewater system construction process, the Contractor shall implement the follow best management practices recommended by the Air District:</p> <ol style="list-style-type: none"> 1. All haul trucks transporting soil, sand, and other loose material off-site shall be covered. 2. 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 Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. 3. All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. 4. A publicly visible sign shall be posted with the telephone number and person to contact at the District regarding dust complaints. Upon receipt of a dust complaint, this person shall respond and take corrective action within 48 hours. The Air District’s phone number shall also be visible to ensure compliance with applicable regulations. 	<p>Implementation Responsibility: Project Manager from District</p> <p>Monitoring Frequency: Prior to and during ground disturbance</p>	<p>Monitoring Responsibility: Project Manager from District</p>	<p>Initials _____</p> <p>Date _____</p>

Environmental Impact	Mitigation Measures	Implementation Responsibility & Timing	Monitoring Responsibility	Performance Objective
Biological Resources				
<p>Impact BIO-d Would the project 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?</p> <p>Significance of Impact Before Mitigation: Potentially Significant</p> <p>Significance of Impact After Mitigation: Less than Significant</p>	<p><i>Mitigation Measure BIO-1</i></p> <p>The Project shall conduct initial ground disturbance and remove vegetation outside the nesting season (i.e., September 1 to January 31) to avoid any potential impacts to nesting birds.</p>	<p>Implementation Responsibility: Project Manager from District or/ and Consulting Biologist</p> <p>Monitoring Frequency: Prior to and during ground disturbance</p>	<p>Monitoring Responsibility: Project Manager from District or/ and Consulting Biologist</p>	<p>Initials _____</p> <p>Date _____</p>

Hydrology and Water Quality				
<p>Impact HYRDO-a: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?</p> <p>Significance of Impact Before Mitigation: Potentially Significant</p> <p>Significance of Impact After Mitigation: Less than Significant</p>	<p><i>Mitigation Measure HYDRO-1</i></p> <p>No construction shall be permitted under wet weather conditions. Construction should be scheduled to occur in the dry season, between May and October, if feasible. Should construction need to extend into the wet season, the Contractor shall implement best management to minimize the likelihood of spillage into surface or groundwater. These include:</p> <ul style="list-style-type: none"> ▪ Grading and excavation work shall occur during dry weather; ▪ All denuded areas shall be stabilized through installation of temporary erosion controls such as erosion control fabric or bonded fiber matrix. These controls shall be maintained until vegetation is established; ▪ Sediment shall be prevented from migrating off-site and storm drain inlets shall be protected by installing and maintaining appropriate measures such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.; and ▪ Stockpiled landscaping materials shall be protected from wind and rain through storage under tarps. 	<p>Implementation Responsibility: Project Manager from District</p> <p>Monitoring Frequency: Prior to and during ground disturbance</p>	<p>Monitoring Responsibility: Project Manager from the District</p>	<p>Initials _____</p> <p>Date _____</p>

<p>Impact HYRDO- c.iii) Would the project 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 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?</p> <p>Significance of Impact Before Mitigation: Potentially Significant</p> <p>Significance of Impact After Mitigation: Less than Significant</p>	<p>Mitigation Measure HYDRO-1</p> <p>No construction shall be permitted under wet weather conditions. Construction should be scheduled to occur in the dry season, between May and October, if feasible. Should construction need to extend into the wet season, the Contractor shall implement best management to minimize the likelihood of spillage into surface or groundwater. These include:</p> <ul style="list-style-type: none"> ▪ Grading and excavation work shall occur during dry weather; ▪ All denuded areas shall be stabilized through installation of temporary erosion controls such as erosion control fabric or bonded fiber matrix. These controls shall be maintained until vegetation is established; ▪ Sediment shall be prevented from migrating off-site and storm drain inlets shall be protected by installing and maintaining appropriate measures such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.; and ▪ Stockpiled landscaping materials shall be protected from wind and rain through storage under tarps. 	<p>Implementation Responsibility: Project Manager from District</p> <p>Monitoring Frequency: Prior to and during ground disturbance</p>	<p>Monitoring Responsibility: Project Manager from the District</p>	<p>Initials _____</p> <p>Date _____</p>
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Noise				
<p>Impact NOISE a: Would the Project result in generation of a substantial temporary or permanent increase 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?</p> <p>Significance of Impact Before Mitigation: Potentially Significant</p> <p>Significance of Impact After Mitigation: Less than Significant</p>	<p><i>Mitigation Measures NOISE-1</i></p> <p>The Contractor shall implement the following best management practices for noise reduction throughout project construction:</p> <ul style="list-style-type: none"> • Construction hours shall be clearly posted on a sign at the entrance to the project site at least 48 hours prior to the commencement of construction activities; • The District or the Contractor shall be responsible for responding to any noise complaints. Contact information for representatives of both parties shall be posted on the construction site; • All construction equipment used on-site shall be muffled and maintained in good working order. All internal combustion engine-driven equipment shall be fitted with mufflers in good condition; and • Unnecessary idling of internal combustion engines shall be prohibited and all equipment shall be turned off when not in use. 	<p>Implementation Responsibility: Contractor</p> <p>Monitoring Frequency: Prior to and during ground disturbance</p>	<p>Monitoring Responsibility: Project Manager from the District</p>	<p>Initials _____</p> <p>Date _____</p>

Utilities and Service Systems

Impact UTILITIES a: Would the project 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?

Significance of Impact Before Mitigation:

Potentially Significant

Significance of Impact After Mitigation:

Less than Significant

Mitigation Measures UTILITIES -1

Prior to the start of ground disturbance, the Contractor shall determine the precise location of existing on-site utilities. If any water lines are located within ten feet of the proposed septic system, the Contract shall reroute the lines to a minimum distance of ten feet away. If a line may not be rerouted due to site constraints and water and sewer lines must cross, the Contractor shall install a PVC sleeve on both the water and the sewer line in question.

Implementation Responsibility:

Contractor

Monitoring Frequency:

Prior to and during ground disturbance

Monitoring Responsibility:

Project Manager from the District

Initials _____

Date _____