

CHAPTER SIX

CUMULATIVE IMPACTS

6.1 INTRODUCTION

This section describes the past, present, and reasonably foreseeable future actions relevant to cumulative impacts. The analysis of cumulative impacts recognizes that while the impacts of individual actions may be small, when combined with the impacts of past, present, and reasonably foreseeable future actions on populations or resources in and around Gness Field Airport (DVO or Airport), the impacts could be potentially significant. Cumulative impacts are defined by the Council on Environmental Quality (CEQ) in 40 Code of Federal Regulations (CFR) § 1058.7 as: “The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

Additionally, the CEQ further explained in *Considering Cumulative Effects under the National Environmental Policy Act* that “each resource, ecosystem, and human community must be analyzed in terms of its ability to accommodate effects, based on its own time and space parameters.” Therefore, a cumulative effects analysis normally will encompass geographic boundaries beyond the immediate area of the Proposed Action, and a time frame, including past actions and foreseeable future actions, in order to capture these additional effects. The evaluation of cumulative impacts in this Supplement to the Final Environmental Impact Statement (SEIS) considers the past, present, and reasonably foreseeable future projects or actions undertaken by DVO and other parties.

6.2 DEFINING THE CUMULATIVE IMPACT STUDY AREA AND TIMEFRAMES

For the purposes of this SEIS, other projects at the Airport or projects within the General Study Area (GSA), as shown in **Exhibit 6-1**, will be considered to be within the overall Cumulative Impact Study Area. The Federal Aviation Administration (FAA) 1050.1F Desk Reference Section 15.2 states “*The study area for cumulative impacts analysis is the same area defined for a project’s direct and indirect impact analysis. Thus, the study area will be different for each impact category.*” The development of the Cumulative Impact Study Area(s) by the FAA is consistent with the FAA 1050.1F Desk Reference using the Detailed Study Area (DSA) and the GSA and the specific study areas identified in Chapter 4, *Affected Environment* for each resource category.

The projects to be included in the Cumulative Impact analysis were identified through review of Marin County development databases and coordination with Marin County staff.

6.3 IDENTIFICATION OF PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

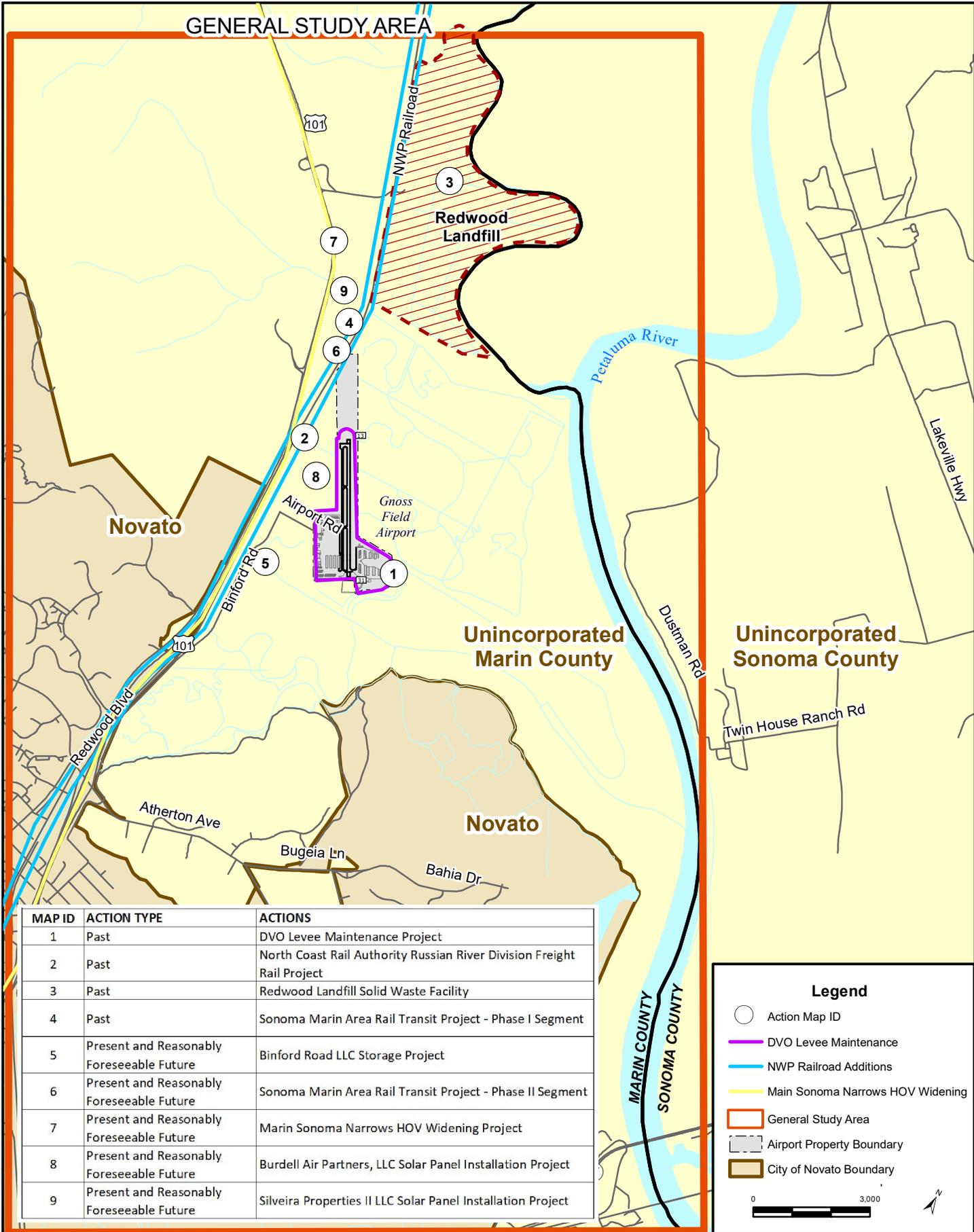
The evaluation of cumulative impacts in this SEIS considers the past, present, and reasonably foreseeable future projects or actions undertaken at the Airport by Marin County or other parties, as well as other actions, including development undertaken by others within the spatial boundaries of the GSA. For linear transportation projects, this evaluation considered the portions of the project physically located within the GSA. For the purposes of this assessment, the past actions are defined as those that were completed before or during 2018. Present actions are defined as those completed between 2019 and 2023. Reasonably foreseeable future actions are defined as those planned to be completed between 2024 and 2029, which is within the planning horizon of this SEIS.

As there are several multiphase projects that completed construction phases in 2018, but also have ongoing or anticipated future work between 2024 and 2029, the present projects and reasonably foreseeable future projects are discussed in a combined section. The 2029 planning horizon represents a timeframe that is long enough to identify potential follow on environmental impacts yet near enough that realistic predictions of projects and associated environmental impacts can be made. This section evaluates those past, present, and reasonably foreseeable future projects.

6.3.1 PAST PROJECTS

Recent past projects could potentially add incremental impacts to those created by the Sponsor's Proposed Project or its alternatives. The availability of older data often determines how far back past effects may be examined. Certain types of data "may be available for extensive periods in the past," while other data "may be available only for much shorter periods," according to CEQ guidance. Consequently, because the data describing past conditions are usually scarce, the analysis of past impacts is often qualitative.¹ This section includes a discussion of recently completed past projects that were identified to have occurred within the GSA that have the ability to contribute to the cumulative impacts for this SEIS.

¹ Council on Environmental Quality, *Considering Cumulative Impacts Under the National Environmental Policy Act*, January 1997.



MAP ID	ACTION TYPE	ACTIONS
1	Past	DVO Levee Maintenance Project
2	Past	North Coast Rail Authority Russian River Division Freight Rail Project
3	Past	Redwood Landfill Solid Waste Facility
4	Past	Sonoma Marin Area Rail Transit Project - Phase I Segment
5	Present and Reasonably Foreseeable Future	Binford Road LLC Storage Project
6	Present and Reasonably Foreseeable Future	Sonoma Marin Area Rail Transit Project - Phase II Segment
7	Present and Reasonably Foreseeable Future	Marin Sonoma Narrows HOV Widening Project
8	Present and Reasonably Foreseeable Future	Burdell Air Partners, LLC Solar Panel Installation Project
9	Present and Reasonably Foreseeable Future	Silveira Properties II LLC Solar Panel Installation Project

Legend

- Action Map ID
- DVO Levee Maintenance
- NWP Railroad Additions
- Main Sonoma Narrows HOV Widening
- ▭ General Study Area
- ▭ Airport Property Boundary
- ▭ City of Novato Boundary

0 3,000

THIS PAGE INTENTIONALLY LEFT BLANK

6.3.1.1 DVO Levee Maintenance Project

The DVO Levee Maintenance Project consisted of two actions. The first was adding additional material to the top and sides of the levees and the second was the installation of culverts and flow control gates. These improvements provide a greater degree of flood protection for Airport facilities and allow the Airport to be autonomous in the event of an outer levee breach or intrusion of floodwater. In 2001, Marin County prepared an initial study in accordance with the California Environmental Quality Act (CEQA), which found no significant impacts would result from the project. The only impacts discussed were related to construction activity and all would occur only during the period when construction was occurring. Since the maintenance project was completed in 2007 and none of the impacts were identified to occur beyond the construction period, the impacts related to the levee maintenance project are not included in the discussion of cumulative impacts.

6.3.1.2 North Coast Rail Authority Russian River Division Freight Rail Project

The Russian River Division of the North Coast Rail Authority (NCRA) rail corridor extends approximately 142 miles from Willits in Mendocino County, California southward to Lombard in Napa County. From Willits the line runs southward generally following Highway 101 through Redwood Valley, Calpella, Ukiah, Hopland, Cloverdale, Geyserville, Healdsburg, Windsor, Santa Rosa, Rohnert Park, Cotati, Petaluma, and Novato. South of Novato, at Highway 37, the line runs eastward near the shore of San Pablo Bay, over the Petaluma River, past Black Point, past the old station at Schellville, over the Napa River, and terminates in Lombard north of the city of American Canyon. The NCRA proposed resuming freight rail service from Willits to Lombard, traveling through Novato. The rail line has provided rail service dating back to the early 1900's and required rehabilitation before trains could safely resume operations. Commercial freight operations began on July 13, 2011.²

6.3.1.3 Redwood Landfill Solid Waste Facility³

The Redwood Landfill (RLI) is located approximately 3,000 feet north/northwest of DVO along Highway 101. This project included the following activities:

- Merge the existing landfill permit and composting permit into a single solid waste facility permit;

² North Coast Rail Authority Final Environmental Impact Report, 2011, Available on-line at: <http://www.northcoastrailroad.org/Acrobat/FEIR/>

³ Redwood Landfill Solid Waste Facilities Permit Revision Final Supplemental Environmental Impact Report. Available on-line at: <http://www.calrecycle.ca.gov/SWFacilities/Directory/21-AA-0001/Detail/>.

- Establish maximum daily tonnages of solid waste, compostable material, cover material and recyclables, the total of which is 2,310 tons per day;
- Increase traffic to 662 vehicles per day;
- Clarify hours and days for the receipt of wastes and other materials and for certain landfill activities;
- Add food waste as a compost feedstock;
- Increase site capacity; and
- Extend the estimated closure date to July 2024.

Mitigation for this project, which is included as a condition of the expanded permit from Marin County, includes the continued implementation of the RLI bird control program. To discourage gull populations, RLI currently has the following operational controls available as part of its wildlife management plan.

- Minimize the area of the working face and push distance when possible;
- Use pyrotechnic devices to discourage scavenging gulls during refuse placement and compaction;
- Place daily cover consisting of a 6-inch thickness of compacted soil or approved alternative;
- Employ an outside contractor in the winter months who uses falcons to deter gulls from the landfill; and
- A propane gas-fired cannon may be used in conjunction with the pyrotechnic devices. The cannon emits a loud blast that discourages gulls from approaching the active face of the landfill.

Currently, aircraft fly over all portions of the RLI when arriving to and departing from DVO. There have been no reported bird strikes related to activity at the RLI.

In 2009, the landfill received and updated Waste Discharge Requirements from the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) and received a Title 5 Air Permit from the Bay Area Air Quality Management District (BAAQMD) in 2010.⁴ In 2017, the RLI constructed a Landfill Gas to Energy Plant.

⁴ California Integrated Waste Management Board, *Redwood Landfill Final Environmental Impact Report*, September 2011, Available on-line at: <http://www.ciwmb.ca.gov/permittoolbox/Notices/RedwoodLF/default.htm>.

6.3.1.4 Sonoma Marin Area Rail Transit Project – Phase I Segment

The Sonoma-Marin Area Rail Transit District (SMART) project includes development of a 70-mile-long passenger railroad and parallel bicycle-pedestrian path along the existing Northwestern Pacific Railroad right of way through Marin and Sonoma counties. The rail line would run from Cloverdale, at the north end of Sonoma County, to Larkspur, where the Golden Gate Ferry connects Marin County with San Francisco. Stations are to be located at major population and job centers of the North Bay, including San Rafael, Novato, Petaluma, Cotati, Rohnert Park, Santa Rosa, Windsor, and Healdsburg. Estimated project cost is \$690 million, the majority of which is being funded by a voter-approved one-quarter percent sales tax increase, Measure Q, approved November 8, 2008.

After Measure Q was approved, the economic recession that had started in 2007 and extended into 2009 reduced SMART's projected revenues by several hundred million dollars over the 20-year life of the sales tax, leaving the agency short of the money needed to complete the project as originally envisioned. Consequently, SMART's Board of Directors has decided to build in stages. Construction on the Phase 1 Segment, 43 miles from downtown San Rafael with Sonoma County Airport, began in 2012 and was completed in 2017. Passenger service began in 2017.

6.3.2 PRESENT PROJECTS AND REASONABLY FORESEEABLE FUTURE ACTIONS

Projects that are presently ongoing, or soon to get underway could potentially add incremental impacts to those created by Alternative B, D, or E. Like past and present projects, future projects could potentially add incremental impacts to those created by Alternative B, D, or E. This section includes a discussion of development and improvement plans within the GSA that are currently being proposed, are underway, were recently completed as well as reasonably foreseeable future development and improvement plans.

6.3.2.1 Binford Road LLC Storage Project

This project involves the development of multi-purpose self-storage facility on 29 acres of the Binford Road LLC's 47.3-acre project site, located at 8190 Binford Road, Novato, directly west of DVO. The project would contain approximately 685 storage units in 25 buildings (approximately 247,440 square feet of floor area) ranging from 18 to 24 feet in height for personal vehicles, RV's, boats, general household items and office storage. Access to the storage units would be from Binford Road and from two internal roadways that would extend along the north and south levees of the Black John Slough. A public viewing area with parking for viewing the marsh wetlands would be provided immediately off Binford Road to afford the public views down the length of the canal towards the Petaluma River. The project includes amending the Countywide Plan Land Use Designation from RC (Recreational

Commercial) to IND (Industrial) (Parcels 1 and 2) and OS (Open Space) (Parcel 3) and re-zoning the property from RCR (Resort and Commercial Recreation District) to BFC-IP (Bayfront Conservation – Industrial Planned District) (Parcels 1 and 2) and BFC-OA (Bayfront Conservation – Open Space) (Parcel 3).⁵ The Marin County Board of Supervisors adopted County Ordinance 3467 on April 3, 2007, to rezone the property for the Binford Road LLC Self-Storage Facility. The construction timeline is to be determined based on applicant cash flow.⁶

6.3.2.2 Sonoma Marin Area Rail Transit Project (SMART) - Phase II Segment

The SMART Phase I Segment spans from the Sonoma County Airport to Downtown San Rafael. The SMART Phase II Segment is now open between the Sonoma County Airport and Larkspur. The SMART train extension to Windsor is currently under construction. Future proposals include extending service with construction for a Petaluma North Station, a Healdsburg Station, and a Cloverdale Station. Construction on the future segments, ultimately completing the project from Larkspur to Cloverdale, will be built as additional revenues become available.⁷ As part of the environmental restoration impacts to wetlands associated with the SMART project, SMART purchased 56 acres of land known as the Mira Monte Marina site located between the RLI landfill and DVO. The Mira Monte Marina site is an environmental mitigation and wetland restoration site which added additional wetlands and wildlife habitat that could attract wildlife and increase wildlife-aircraft strike hazard potential for aircraft using DVO.⁸ However, with implementation of the DVO Wildlife Hazard Management Plan, this incremental cumulative increase in bird-aircraft collision hazards is considered not significant.

6.3.2.3 Marin Sonoma Narrows HOV Widening Project

This proposed project would widen Highway 101 along specific freeway portions located in Novato and Petaluma in Marin and Sonoma Counties, respectively. This section discusses the portions of the project within the GSA. This widening would occur primarily in the existing freeway median. The proposed project also includes widening and realigning the roadway in the Petaluma portion, and upgrading the

⁵ Marin County Planning Commission, Meeting Agenda, August 28, 2006. On-line at: <https://www.marincounty.org/depts/cd/divisions/planning/boards-commissions-and-public-hearings/planning-commission-hearings-page>

⁶ http://www.co.marin.ca.us/depts/CD/Main/pdf/Propdev/PD45_Report.pdf Telephone conversation between with Curtis Havel, Senior Planner, Marin County; March 18, 2013. <https://www.marincounty.org/depts/CD>

⁷ *Sonoma Marin Area Rail Transit Project*, On-line at: www.sonomamarintrain.org/ Retrieved August 2019.

⁸ Marin Press Democrat, December 17, 2014. On-line at: www.pressdemocrat.com/news/3264380-181/18-million-project-required-as.

Highway 101 facility along its entire length. The various improvements that are being proposed include:

- Adding northbound and southbound High Occupancy Vehicle (HOV) lanes the entire project length of 26.0 kilometers (km) (16.1 miles) that would be restricted to vehicles carrying two or more people per vehicle (also referred to as carpool lanes). These HOV lanes would be installed in the median of Highway 101 and directly connect to proposed HOV lanes to the south near the SR 37 Interchange and to proposed HOV lanes to the north beginning at Old Redwood Highway in the City of Petaluma (Sonoma County); Widening and realigning Highway 101 in the Central Segment along the Novato Narrows, which makes up 13.1 km (8.1 miles) of the entire project boundaries. This would result in converting the existing expressway to an access-controlled freeway. Access would be available through new interchanges and existing local roads, which would be reconfigured to connect to new interchanges in this segment;
- Replacing bridges and constructing new bridges across San Antonio Creek and replacing the Petaluma River Bridge;
- Constructing soundwalls along the Novato and Petaluma Segments;
- Constructing bicycle and pedestrian paths within the Central Segment to replace bicycle access that currently exists along the expressway shoulder; and
- Upgrading drainage facilities.

A Final EIR was released in July 2009. Ground was broken on July 14, 2011. As of August 2018, the Transportation Authority of Marin⁹ had the following information available regarding Phase 1 of the project:

- *A1 - HOV Lanes in Novato* – Primarily addressed congestion by adding HOV lanes through median widening, which includes northbound (NB) HOV lanes from Highway 37 to north of Atherton Boulevard and southbound (SB) HOV lanes from Highway 37 to Rowland Boulevard. The HOV lanes opened to traffic in summer 2012.
- *A2 - Extended Southbound HOV Lane* – to Franklin overhead, construction was completed in 2013.
- *A3 - Extended Northbound HOV Lane* - from Atherton to 1.4 miles south of the Redwood Landfill Interchange, construction was completed in 2014.

⁹ *Transportation Authority of Marin*, On-line at: <https://www.tam.ca.gov/projects-programs/marin-sonoma-narrows>, Retrieved August 2018.

- *B1 – Southerly Interchange* - Constructed a new interchange and frontage roads to serve San Antonio Road, and closed uncontrolled access points. Included Class I and Class II bike paths. Construction was completed in 2014
- *B2 - Petaluma Boulevard South Interchange* - Constructed a new interchange and supporting frontage roads to serve Petaluma Boulevard South and closed uncontrolled access points. Includes construction of the Petaluma River Bridge to accommodate future HOV lanes. Construction was completed in 2016.
- *B3 - San Antonio Bridge Replacement & Curve Improvement* - Realigns the highway westward in the vicinity of San Antonio Creek, establishes a new frontage road for improved access, and raises the grade of the bridge at the creek to address periodic flooding concerns. Construction is expected to be completed in early 2019.
- *C3 - Northbound Route 116(E)* - Replaced separation bridge and widened southbound separation bridge to accommodate HOV lanes on US101. Construction was completed in 2015
- *L1A - US101 Planting and Orange Avenue Soundwall* - Planted trees and other vegetation along the constructed corridor in Novato. Installed a soundwall on the northbound lanes between DeLong Avenue and Atherton Avenue. Construction was completed in 2016.
- Future Phase II Projects are also published with tentative timelines; as of August 2018, the Phase II projects are unfunded.

6.3.2.4 Burdell Air Partners, LLC Solar Panel Installation Project

This project involves the development of a solar panel installation on six acres of the Burdell Air Partners, LLC's 45-acre project site, located directly west of DVO and east of Highway 101. The project would contain approximately 3,600 high-efficiency solar PA panels. The proposed panels would be ground mounted at a fixed angle and coupled with high efficiency inverters for an annual electrical output of approximately 1,818,000 kWh, which would be delivered to Marin Clean Energy (MCE). The panels, when tilted, would be approximately 14 feet in height. The panels would consist of a series of support structures consisting of steel framing and steel cable bracing. Access to the site would be maintained through Highway 101. The parcel is currently zoned for industrial, high density development.¹⁰ The construction timeline is to be determined based on applicant cash flow.

¹⁰ Marin County Planning Commission, Burdell Air Partners LLC Use Permit / Design Review (P1466). On-line at: https://www.marincounty.org/depts/cd/divisions/planning/projects/novato/burdell-air-partners-llc_up_dr_p1466_no

6.3.2.5 Silveira Properties II LLC Solar Panel Installation Project

This project involves the development of a new small-scale utility solar and energy storage facility on a vacant lot in Novato, north of DVO and east of Highway 101. The project would contain approximately 11,310 solar modules and 66 string inverters. The project proposes to interconnect to an existing onsite Pacific Gas and Electric (PG&E) distribution system, and would create additional energy storage technology to allow for onsite energy storage. All power generated from the facility would be sold to MCE through a long-term Power Purchase Agreement. The proposed solar modules would be in three different areas on the site, with approximately 3,770 modules in each area. The modules would reach a maximum height of eight feet above grade. The project is in the Pre-Application Review phase, and public comments were accepted until September 28, 2018. There is no construction timeline at present.¹¹ The applicant for this project would have to address any issues related to removal of wildlife habitat and vegetation north of the airport change the visual appearance of the area, and potentially cause glare issues for pilots.

6.4 POTENTIAL INCREMENTAL INCREASES IN ADVERSE EFFECTS

Chapter Four, *Affected Environment*, describes the existing environmental conditions within the study area for the runway development alternatives. If no action were to take place, it can be reasonably determined that the existing environment at DVO and its vicinity would not change significantly from current conditions. However, as the population of the region changes in the future, related changes are anticipated to occur; these changes would occur regardless of whether any of the runway extension project alternatives are approved and implemented. Therefore, the conditions described in Chapter Four, *Affected Environment*, serve as a basis for comparison of the incremental increases in adverse effects that would potentially result from implementation of any of the runway extension project alternatives.

6.5 CUMULATIVE IMPACT COMPARISON

Impacts of Alternative B, D, and E are evaluated in this section as compared to the Alternative A (No Action) for the future years. Several past, present, and future projects in the vicinity of DVO are described in this section as they may relate or contribute to potential cumulative impacts within the various environmental categories evaluated in this SEIS.

In general, the projects considered in this cumulative impact analysis are included because they are either within the existing Airport boundary where the SEIS

¹¹ Marin County Planning Commission, Silveira Ranch Solar A, B, & C. On-line at: https://www.marincounty.org/media/files/departments/cd/planning/currentplanning/projects/silveira-properties-ii-llc_pr_no/silveira-plans.pdf?la=en.

alternatives would be implemented or are in close proximity of the Airport. Consideration of impacts beyond the DVO property boundary is dependent on the environmental resource being considered, and is influenced by such factors as political and land use jurisdictions, any unique characteristics of the resource, importance of the resource in a local and regional setting, and the distance the impact within that resource can travel.

For environmental resources where implementation of Alternative B, D, or E would have no environmental impact, there is no potential for an adverse cumulative environmental impact to occur. Therefore, the following discussion of cumulative impacts discusses only those environmental categories where environmental impacts could result from implementation of Alternative B (Sponsor's Proposed Project), Alternative D, or Alternative E. Those categories are: air quality; water quality; biological resources; wetlands and streams; natural resources, energy supply, and sustainable design. Cumulative construction impacts are discussed within the impact categories previously listed.

6.5.1 AIR QUALITY

The air quality assessment of future conditions presented in Section 5.5, *Air Quality*, in Chapter Five, *Environmental Consequences*, is required to include all reasonably foreseeable¹² future conditions associated with emission sources at the Airport, particularly for the use of motor vehicles, Ground Service Equipment (GSE), and aircraft. As such, all known and quantifiable past, present, and reasonably foreseeable future actions relating to emission sources at the Airport for the 2024 and 2029 analyses were included in the emissions inventory. A discussion of this analysis is included in Appendix F-1, *Air Quality*. The analysis showed that none of the future baseline conditions under Alternative A, or the construction and operational conditions under Alternative B, D, or E would have the potential to cause significant air quality impacts.

DVO is located in Marin County which, for Federal air quality attainment status, is included in the San Francisco Bay Intrastate Air Quality Region. The region does not currently meet the Federal eight-hour standard for ozone levels and has been designated by the U.S. Environmental Protection Agency (USEPA) as a marginal nonattainment area for ozone.¹³ Further, USEPA has determined the county exceeds the 24-hour standard for emissions of fine particulate matter (PM_{2.5}).

For State of California air quality attainment status, DVO is located within the BAAQMD. California maintains more stringent standards than the USEPA for which

¹² FAA, *Environmental Impacts: Policies and Procedures Order 1050.1F*, Chapter 7 Section 1.1-f, 2015.

¹³ USEPA, *National Ambient Air Quality Standards for Ozone*, October 2015 Available on-line at: <https://www.gpo.gov/fdsys/pkg/FR-2015-10-26/pdf/2015-26594.pdf>

the County must adhere called the California Ambient Air Quality Standards (CAAQS). Marin County has been designated by the BAAQMD as nonattainment for the eight-hour and one-hour standards for ozone, the annual arithmetic mean and the twenty-four-hour standards for coarse particulate matter (PM₁₀), and the annual arithmetic mean standard for PM_{2.5}.¹⁴

Construction activities associated with this project would result in temporary air quality impacts, including direct emissions from construction equipment and trucks, fugitive dust emissions from site demolition and earthwork, and increased emissions from motor vehicles and haul trucks on the on-site and off-site roads. The impacts would occur only within the immediate vicinity of the construction site and would be mitigated through best management practices to reduce emissions, particularly fugitive particle emissions, during construction. As discussed in Section 5.5, *Air Quality*, in Chapter Five, *Environmental Consequences*, and Appendix F-1, the increase in emissions due to construction and project implementation would not exceed the applicable Clean Air Act (CAA) thresholds and are therefore not significant. The mitigation procedures identified in Section 5.5 would be implemented to minimize potential impacts that would occur during construction.

Due to their proximity to DVO and similar timing of construction with implementation of either Alternative B, D, or E, the following projects have the potential to cumulatively impact air quality within the San Francisco Bay Intrastate Air Quality Region/BAAQMD:

- Sonoma Marin Area Rail Transit Project – Phase II Segment – this project would cause a temporary increase in emissions during construction. Implementation of this project would generate CO, Reactive Organic Gas (ROG), Nitrogen Oxides (NO_x), and PM₁₀ air emissions. Operation of the passenger trains would generate some new pollutant emissions as diesel fuel is consumed to operate the trains. However, reductions in pollutant emissions would be achieved as a result of a slight decrease in motor vehicle usage as some members of the public reduce their vehicle usage and take the train.¹⁵ The net emissions of CO, ROG, NO_x, and PM₁₀ as a result of this project would not exceed the significance thresholds set by the CAA.¹⁶
- Marin Sonoma Narrows HOV Widening Project – this project would cause a temporary increase in emissions during construction. Implementation of this project would not result in a significant impact to air quality as a result of emissions of criteria pollutants. Implementation of this project would lead to

¹⁴ BAAQMD, *Air Quality Standards and Attainment Status*, August 2018, Available On-line at: <http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status>

¹⁵ *Sonoma-Marin Area Rail Transit Draft Environmental Impact Report*, November 2005.

¹⁶ *Sonoma-Marin Area Rail Transit Final Environmental Impact Report*, June 2006.

a reduction in traffic congestion along Highway 101 in Marin and Sonoma Counties.¹⁷

- Binford Road LLC Storage Project – construction of this project is to be determined by applicant cash flow.¹⁸ Therefore, it is unknown whether air quality impacts from construction activity would occur in the same timeframe as construction impacts from implementation of Alternative B, D, or E. In either case, air emissions associated with construction activities are temporary. This project would likely result in a minor increase in air emissions due to additional surface vehicles accessing the site; however, due to the minimal number of additional vehicles these air emissions are likely to be below the CAA *de minimis* thresholds for criteria air pollutants.
- Burdell Air Partners, LLC Solar Panel Installation Project - construction of this project is to be determined by applicant cash flow. Therefore, it is unknown whether air quality impacts from construction activity would occur in the same timeframe as construction impacts from implementation of Alternative B, D, or E. In either case, air emissions associated with construction activities are temporary. This project would likely result in a minor increase in air emissions due to additional surface vehicles accessing the site for maintenance of the solar panels; however, due to the minimal number of additional vehicles these air emissions are likely to be below the CAA *de minimis* thresholds for criteria air pollutants.
- Silveira Properties II LLC Solar Panel Installation Project – the project is in the Pre-Application Review phase and no construction timeline is available at present. Therefore, it is unknown whether air quality impacts from construction activity would occur in the same timeframe as construction impacts from implementation of Alternative B, D, or E. In either case, air emissions associated with construction activities are temporary. This project would likely result in a minor increase in air emissions due to additional surface vehicles accessing the site for maintenance of the solar panels; however, due to the minimal number of additional vehicles these air emissions are likely to be below the CAA *de minimis* thresholds for criteria air pollutants.
- In addition to the projects above, implementation of Alternative B, D, or E would increase the need for electricity to light the extended runway and taxiway. This would require additional electricity generation offsite, which may increase emissions from fossil fuel burning power plants. The utility plants serving electricity to the Airport are required to follow strict guidelines concerning air emissions. The relatively small increase in electricity that would be needed to power the additional lights would not result in the need for

¹⁷ Marin-Sonoma Narrow (MSN) HOV Widening Project Final Environmental Impact Report/Final Environmental Impact Statement, July 2009.

¹⁸ Telephone conversation between with Curtis Havel, Senior Planner, Marin County; March 18, 2013. <https://www.marincounty.org/depts/CD>

additional power generating systems and therefore is assumed to be able to be handled by the existing system.

The additional criteria pollutant air emissions resulting from implementation of Alternative B, D, or E are below the CAA and BAAQMD *de minimis* thresholds, and as such the project is assumed not to cause an exceedance of the National Ambient Air Quality Standards (NAAQS).¹⁹ Furthermore, none of the past, present, or reasonably foreseeable future projects described above would cause criteria air pollutant emissions that exceed CAA *de minimis* thresholds.

The net increase in emissions calculated for Alternative B, D, and E for the projects listed above are *de minimis* and as such are considered negligible and insignificant. Therefore, while the projects contribute to the cumulative emissions of air pollutants in Marin County, the cumulative effect of the net air emissions would not cause or contribute to any new violation of the NAAQS or the CAAQS, would not increase the frequency or severity of an existing violation, and would not delay timely attainment of any standard, and the cumulative impact on air quality is not significant.

The cumulative impact of this Proposed Action on the global climate when added to other past, present, and reasonably foreseeable future actions is not currently scientifically predictable. Aviation has been calculated to contribute approximately three percent of global carbon dioxide (CO₂) emissions; this contribution may grow to five percent by 2050. Actions are underway within the U.S. and by other nations to reduce aviation's contribution through such measures as new aircraft technologies to reduce emissions and improve fuel efficiency, renewable alternative fuels with lower carbon footprints, more efficient air traffic management, market-based measures and environmental regulations including an aircraft CO₂ standard. The U.S. has ambitious goals to achieve carbon-neutral growth for aviation by 2020 compared to a 2005 baseline, and to gain absolute reductions in greenhouse gas (GHG) emissions by 2050. At present there are no calculations of the extent to which measures individually or cumulatively may affect aviation's CO₂ emissions. Moreover, there are large uncertainties regarding aviation's impact on climate. The FAA, with support from the U.S. Global Change Research Program and its participating Federal agencies (e.g., NASA, NOAA, EPA, and DOE), has developed the Aviation Climate Change Research Initiative (ACCRI) in an effort to advance scientific understanding of regional and global climate impacts of aircraft emissions, with quantified uncertainties for current and projected aviation scenarios under changing atmospheric conditions.²⁰

¹⁹ FAA, *Air Quality Procedures for Civilian Airports and Air Force Bases*, April 1997, quoted from Section 2.5.1, *NAAQS Assessment*, "If the action is in a nonattainment or maintenance area and exempt or presumed to conform under conformity requirements, it is assumed that a NAAQS assessment is not required for an airport or air base action since it is unlikely the action's pollutant concentrations would exceed the NAAQS."

²⁰ 27th International Congress of the Aeronautical Sciences, Nathan Brown, et. al. *The U.S. Strategy for Tackling Aviation Climate Impacts*, 2010.

6.5.2 WATER QUALITY

Section 5.6, *Water Quality*, in Chapter Five, *Environmental Consequences*, discussed the potential water quality impacts of Alternatives B, D, and E. It is disclosed in that section that cumulatively there would be an increase in stormwater quantity from implementing the projects identified in this cumulative impact section. The increase would not exceed applicable standards. Marin County would amend the existing Stormwater Pollution Prevention Plan (SWPPP) for DVO and Best Management Practices (BMPs) would be adhered to in order to minimize erosion and runoff during construction.

Alternatives B, D, and E do not have the potential to disturb hazardous materials that could impact water quality. However, previous contamination from leaking underground storage tanks (USTs) exists on Airport property. It was determined by the California Regional Water Control Board San Francisco Bay Region that this subsurface contamination posed a potential threat to human health and water quality and needed to be addressed. In response, a sensitive receptor survey (SRS) and an additional subsurface investigation were conducted in 2009 and 2010, respectively. Based on the findings, the SFBRWQCB determined the site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with Section 25299.3 of the Health and Safety Code and that no further action related to the site is required. The SFBRWQCB also stated that there may be residual petroleum-contaminated soil and groundwater at this site that could pose an unacceptable risk as a result of future construction/redevelopment activities. However, the area that was remediated in association with the USTs is located immediately east of the Airport manager's office, outside of the DSA, and would not be disturbed by construction of Alternative B, D, or E. Also, no oil sheen or petroleum odors have been observed in the drainage ditches that enclose the runway.²¹ This indicates that any potential residual petroleum contamination contained in soil or groundwater near the former USTs had not migrated through soil or groundwater to reach the location of the construction areas for the proposed runway extension alternatives, and therefore would not be affected by construction activities at those locations. As such, it is assumed for the purposes of this SEIS that any further remediation of contaminated soil or groundwater associated with construction near the former UST site would occur with or without implementation of Alternative B, D, or E. Therefore, the contamination it is not expected to cause significant cumulative impacts to water quality.

The other projects identified in this chapter would be required to comply with all existing and future water quality regulatory criteria and permit requirements. In addition, these projects would also be required to develop BMPs that would ensure

²¹ Email from Marin County Airport Manager D. Jensen to Landrum & Brown Analyst G. Elizondo, November 28, 2018.

that concentrations of pollutants of concern do not exceed regulatory criteria. Therefore, there would be no significant cumulative impacts to water quality.

6.5.3 BIOLOGICAL RESOURCES

As discussed in Section 5.9, *Biological Resources*, in Chapter Five, *Environmental Consequences*, Alternative B would result in permanent impacts to 6.88 acres of salt marsh harvest mouse (SMHM) and California clapper rail (CCR) endangered species High Brackish Marsh/Annual Grassland habitat, 2.31 acres of Open Water CCR habitat, and 16.05 acres of temporary impacts SMHM and CCR habitat. Alternative D would result in permanent impacts to 8.24 acres of SMHM and CCR endangered species High Brackish Marsh/Annual Grassland habitat, 2.31 acres of Open Water CCR habitat, and 18.43 acres of temporary impacts SMHM and CCR habitat. Alternative E would result in permanent impacts to 5.60 acres of SMHM and CCR endangered species High Brackish Marsh/Annual Grassland habitat, 2.36 acres of Open Water CCR habitat, and 12.74 acres of temporary impacts SMHM and CCR habitat.

Through formal Endangered Species Act (ESA) Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) in preparation of the June 2014 Final Environmental Impact Statement (EIS), suitable mitigation options and restoration/compensation ratios were determined along with habitat compensation ratios. The habitat compensation ratios are presented in Section 5.9, *Biological Resources* and possible locations of the habitat compensation sites are discussed concurrently with wetland mitigation sites in Section 5.10, *Wetlands and Streams*. No fish species or sensitive plant species occur on DVO.

The necessary habitat compensation for impacts to the endangered SMHM and CCR required for implementation of Alternative B, D, or E, would also provide habitat compensation for more common plant and animal species that currently occur on the Airport.

The following projects have the potential to cause cumulative impacts to the same biological resources as Alternative B, D, and E due to their geographic proximity.

- Sonoma Marin Area Rail Transit Project – Phase II Segment – this project would result in the permanent loss of approximately 31.7 acres of wetland habitat and temporary disturbance of upland habitat. A portion of this acreage is within the GSA for the Sponsors' Proposed Project and its alternatives. Temporary impacts to upland habitat would be minimized to the extent possible and permanent loss of wetlands would be mitigated through wetland replacement at a minimum ratio of 1:1. This project also has the potential to disturb nesting birds. Impacts to nesting birds associated with this project would be mitigated through surveying, limiting construction activity to periods when birds are not present, and adherence to appropriate buffers around

nesting locations.²² The wetland restoration of the 56 acre Mira Monte Marina site, located between the RLI landfill and DVO, as an environmental mitigation and wetland restoration site adds additional wetlands and wildlife habitat immediately north of DVO that could attract wildlife and increase wildlife-aircraft strike hazard potential for aircraft using DVO.²³ However, with implementation of the DVO Wildlife Hazard Management Plan, this incremental cumulative increase in bird-aircraft collision hazards is considered not significant.

- Marin Sonoma Narrows HOV Widening Project – right-of-way acquisition for this project would cause the loss of up to 7.3 acres of wetlands, depending upon the access option that is selected. A portion of these wetlands are located within the GSA for this project. Impacts to wetlands associated with the portion of this project that has been constructed are addressed through the Clean Water Act, Section 404, permit program. The USACOE determines the wetland replacement ratios as part of the CWA 404 permit requirements. The project also has the potential to disturb nesting birds. Impacts to nesting birds would be avoided by conducting surveys and removing nesting locations prior to construction.²⁴

Implementation of Alternative B, D, or E combined with the implementation of one or more of the projects described above would not result in a cumulative impact to biological resources because each of these projects is required to have their own protective measures to avoid, minimize, and provide habitat compensation during implementation of their project. In addition, implementation of the DVO Wildlife Hazard Management Plan would reduce the potential increase in wildlife-aircraft strike hazards to a not significant level. Therefore, implementation of Alternative B, D, or E, when combined with other past, present, or reasonably foreseeable projects would not result in significant adverse impacts to biological resources.

6.5.4 WETLANDS AND STREAMS

Wetlands located on Airport property were delineated and classified in 2009. Section 5.10, *Wetlands and Streams*, in Chapter Five, *Environmental Consequences*, discusses the potential impacts of Alternative B, D, and E on wetlands and streams and provides a thorough description of CWA, Section 404 permitting requirements including compensatory mitigation requirements, and possible locations of compensatory mitigation sites. Alternative B would result in the filling of approximately 11.83 acres wetlands and other waters. Alternative D would result in the filling of approximately 12.73 acres of wetlands and other waters. Alternative E would result in the filling of approximately 7.29 acres of wetlands and other waters.

²² *Sonoma-Marin Area Rail Transit Draft Environmental Impact Report*, November 2005.

²³ Marin Press Democrat, December 17, 2014. On-line at: www.pressdemocrat.com/news/3264380-181/18-million-project-required-as.

²⁴ Marin-Sonoma Narrow (MSN) HOV Widening Project Final Environmental Impact Report/Final Environmental Impact Statement, July 2009.

Marin County would conduct wetland mitigation in accordance with USACOE guidelines.

The following projects have the potential to cause cumulative impacts to the same wetland and other waters resources as Alternatives B, D, and E due to their geographic proximity.

- Sonoma Marin Area Rail Transit Project – Phase II Segment – this project would result in the permanent loss of approximately 31.7 acres of wetland habitat and temporary disturbance of upland habitat. A portion of this acreage is within the GSA for the Sponsors' Proposed Project and its alternatives. Permanent loss of wetlands would be mitigated through wetland replacement at a minimum ratio of 1:1 in accordance with a CWA, Section 404 permit issued by the USACOE.²⁵
- Marin Sonoma Narrows HOV Widening Project – right-of-way acquisition for this project would cause the loss of up to 7.3 acres of wetlands, depending upon the access option that is selected. A portion of these wetlands are located within the GSA for this project. Impacts to wetlands associated with this project would be mitigated through wetland replacement at a minimum ratio of 1:1 in accordance with a CWA, Section 404 permit issued by the USACOE.

As discussed in Section 5.10, the habitat acreages necessary to compensate for wetland and aquatic resource impacts under Alternative B, D, and E based on the 3:1 (replaced:impacted) off-site habitat compensation ratio identified in the Marin Countywide Plan, Natural Systems Goal Bio-3, Policy Bio-3.2, are shown in Table 5.10-3, Table 5.10-4, and Table 5.10-5. Under Alternative B, 35.49 acres of compensatory mitigation acreage would be needed to compensate at a 3:1 ratio for the removal of 11.83 acres of wetland and aquatic habitat. Under Alternative D, 38.19 acres of compensatory mitigation acreage would be needed to compensate at a 3:1 ratio for the removal of 12.73 acres of wetland and aquatic habitat. Under Alternative E, 21.87 acres of compensatory mitigation acreage would be needed to compensate at a 3:1 ratio for the removal of 7.29 acres of wetland and aquatic habitat.

The CWA, Section 404, USACOE permit regulations require that each permitted project provide compensatory mitigation for the impacts to wetlands and waters created by that project. As this Final SEIS identifies compensatory wetland mitigation that would be required to implement Alternative B, D, or E and other projects that could occur at the same time would also be required to provide compensatory mitigation for their impacts to wetlands, implementation of Alternative B, D, or E would not result in a significant cumulative impact to wetland resources.

²⁵ *Sonoma-Marin Area Rail Transit Draft Environmental Impact Report*, November 2005.

6.5.5 ENERGY SUPPLY, NATURAL RESOURCES, AND SUSTAINABLE DESIGN

Section 5.15, *Energy Supply, Natural Resources, and Sustainable Design*, in Chapter Five, *Environmental Consequences*, discusses the potential impacts of Alternative B, D, and E on the supply of energy and natural resources. Implementation of either Alternative B, D or E would result in increased use of energy resources, such as natural gas, fuel, and electricity. Implementation of Alternative B, D, or E would result in a minor increase in the electricity consumption to light the extended runway and taxiway. This would require additional electricity generation offsite. PG&E indicated that they could serve this load for the Airport with no further infrastructure upgrades. There would also be a temporary increase in demand for building materials. However, as these additional demands for electricity and building supplies is relatively small, this would not result in a significant impact on energy or natural resources supplies.

None of the other present or reasonably foreseeable cumulative projects require substantial increases in energy supplies or natural resources. Combining the impacts of other past, present, or reasonably foreseeable future projects with implementation of Alternative B, D, or E would not result in a significant impact to natural resources or energy supplies.

6.6 CONCLUSIONS

The discussion of cumulative impacts discloses the impacts of Alternatives B, D, and E in combination with other past, present, and reasonably foreseeable future actions at DVO.

As described in Chapter Four, *Affected Environment*, the GSA encompasses approximately 12,655 acres and is defined as the area where potential indirect impacts may result from the Sponsor's Proposed Project or its alternatives. The area surrounding DVO within the GSA is predominantly agricultural, vacant, and open space to the east and south with light industrial/office areas to the north and west. With combined cumulative effects of the implementation of Alternative B, D, or E and the past, present and reasonably foreseeable projects described in this chapter, cumulative impacts are limited to those categories listed under Section 6.5, *Cumulative Impact Comparison*. The level of cumulative impacts anticipated to occur within these categories is not significant due to the types of projects proposed, the extent of the built environment in which they would occur, and the existing requirements to provide mitigation for Alternative B, D, E and the past present, and reasonably foreseeable projects that may be occur when either Alternative B, D, or E is implemented. Therefore, implementation of either Alternative B, D, or E would not result in significant cumulative environmental impacts.