INTEGRATED FINAL
ENVIRONMENTAL IMPACT REPORT

AMENDMENT TO NORMAN Y. MINETA SAN JOSE INTERNATIONAL AIRPORT MASTER PLAN

CITY OF SAN JOSE PP 18-103

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NORMAN Y. MINETA
SAN JOSE
INTERNATIONAL
AIRPORT

DAVID J. POWERS
& ASSOCIATES, INC.
ENVIRONMENTAL CONSULTANTS & PLANNERS

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INTRODUCTION TO THE INTEGRATED FINAL EIR

This Integrated Final Environmental Impact Report (EIR) document is a compilation of documents prepared individually and previously made available to the public. The First Amendment to the Draft EIR was prepared by the City prior to certification of the EIR. The First Amendment, together with the Draft EIR, constitute the Final EIR for this project. This Final EIR document integrates these documents, but changes none of them. In conformance with Section 15132 of the CEQA Guidelines, this Final EIR contains the following, at the locations indicated:

(a) The Draft EIR in its entirety is found in the document which follows this page and the technical appendices (including Appendices A through L).

(b) The information included in the First Amendment to the Draft EIR is incorporated into the text of the Draft EIR which follows this page. The First Amendment to the Draft EIR is incorporated in its entirety as Appendix M.

(c) Resolution of the City Council certifying the Final EIR for the project as complete and in conformance with CEQA and adopting findings for the Amendment to the Norman Y. Mineta San Jose International Airport Master Plan EIR (Appendix N).

(d) Notice of Determination for the Amendment to the Norman Y. Mineta San Jose International Airport Master Plan EIR (Appendix O).

The Draft EIR was circulated to affected public agencies and interested parties for a 52-day review period. The First Amendment to the Draft EIR consists of comments received by the Lead Agency on the Draft EIR, responses to those comments, and revisions to the text of the Draft EIR.

The First Amendment to the Draft EIR was circulated to the public and commenting public agencies 10 days prior to the EIR certification hearing. The text revisions identified in the First Amendment have been incorporated into the text of this Integrated Final EIR. All deletions are shown with a ~~line though the text~~ and all new text is shown with <u>underlining</u>.

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ACM	Asbestos-containing material
ADG	Airplane Design Group
AFFF	Aqueous film forming foam
ALP	Airport Layout Plan
ALUC	Airport Land Use Commission
ANCA	Airport Noise and Capacity Act of 1990
ARFF	Aircraft Rescue & Firefighting
AST	Above ground storage tank
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BFE	Base Flood Elevation
BMP	Best management practice
BOMP	Burrowing Owl Management Plan
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CLUP	Comprehensive Land Use Plan
CNEL	Community Noise Equivalent Level
CNG	Compressed natural gas
CO	Carbon monoxide
CO_2	Carbon dioxide
CSJ	City of San José
dBA	A-weighted decibel
DTSC	California Department of Toxic Substances Control
EIR	Environmental Impact Report
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FBO	Fixed base operator
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FIRM	Flood Insurance Rate Map
FIS	Federal Inspection Services
GHG	Greenhouse gases
GSE	Ground service equipment
HSC	Health and Safety Code
HMBP	Hazardous Material Business Plan
HMP	Hydromodification Management Plan
IATA	International Air Transport Association

kW	Kilowatt
LEED	Leadership in Energy and Environmental Design
LOS	Level of service
LUST	Leaking underground storage tank
MGD	Million gallons per day
MRP	Municipal Regional Permit
MSL	Mean sea level
NEPA	National Environmental Policy Act
NOD	Notice of Determination
NOP	Notice of Preparation
NO_x	Nitrogen oxides
NO_2	Nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
OAK	Metropolitan Oakland International Airport
O&D	Origin and destination
OFA	Object Free Area
$PM_{2.5}$	Particulate matter - 2.5 microns in size
PM_{10}	Particulate matter - 10 microns in size
RIM	Runway Incursion Mitigation
ROG	Reactive organic gas
RPZ	Runway Protection Zone
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCCDEH	Santa Clara County Department of Environmental Health
SEL	Sound equivalent level
SFO	San Francisco International Airport
SHPO	State Historic Preservation Office
SJC	Mineta San José International Airport
SJW	San José Water Company
SMARA	Surface Mining and Reclamation Act
SO_x	Sulfur oxides
SO_2	Sulfur dioxide
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	Underground storage tank
TMDL	Total Maximum Daily Load
TSA	Transportation Security Administration
TSM	Transportation system management
Valley Water	Santa Clara Valley Water District
VCP	Voluntary Cleanup Program
VMT	Vehicle miles traveled
VTA	Santa Clara Valley Transportation Authority

SUMMARY

INTRODUCTION

The Norman Y. Mineta San José International Airport (Airport) is one of three primary airports that serves the nine-county San Francisco Bay Area of Northern California. The Airport, which is owned and operated by the City of San José (City), is located on an approximately 1,000-acre site in Santa Clara County at the southerly end of San Francisco Bay, approximately two miles north of downtown San José. The Airport is generally bounded by U.S. 101 to the north, the Guadalupe River and State Route 87 to the east, Interstate 880 to the south, and Coleman Avenue and De la Cruz Boulevard to the west. The Airport primarily serves Santa Clara, Alameda, Santa Cruz, Monterey, and San Benito counties, and is the primary airport serving the Silicon Valley. The Airport accommodated 14.3 million passengers in 2018, or 17 percent of the Bay Area passenger volume. By year 2037, the annual number of passengers is projected to increase to 22.5 million.

The existing Airport Master Plan, which was approved in 1997, consists of a comprehensive and integrated package of improvements to airside and landside facilities[1] at the Airport, such improved facilities having the design capacity to fully accommodate the forecast demand for air passenger, air cargo, and general aviation services in a comfortable and efficient manner. The 73 capital improvement projects identified in the Airport Master Plan include the reconstruction and lengthening of the Airport's two main runways, numerous taxiway improvements, new and reconstructed passenger terminals with up to 49 air carrier gates, new air cargo and general aviation facilities, several multi-story parking garages, and a new fuel storage facility.

Subsequent to the approval of the Airport Master Plan in 1997, many of the 73 capital improvement projects have been constructed. This includes the majority of the airfield improvement projects such as the extension of the Airport's two main runways to 11,000 feet each and associated taxiway improvements. On the east side of the Airport are new and remodeled passenger terminals, a customs facility for international flights, new/expanded parking lots and garages, and a new consolidated rental car facility. A new fuel storage facility has been constructed, as have numerous upgrades to the Airport's roadway system. On the west side of the Airport, new general aviation facilities have been constructed that include over 300,000 ft^2 of aircraft hangars and associated support facilities.

Like most master plans that contain numerous individual projects that are implemented over a multi-year period, the City has amended the 1997 Airport Master Plan multiple times to reflect changed conditions in the aviation industry. The City desires to amend the Airport Master Plan again so that facilities at the Airport reflect the latest aviation demand forecasts and FAA design standards. The environmental impacts of the improvement projects contain in the proposed amendment to the Airport Master Plan are the subject of this EIR. Consistent with the objectives of the *Envision San Jose 2040 General Plan*, the objective of the proposed amendment is to continue the development of the Airport into a world-class facility that attracts new air service and includes national and international connections.

[1] Facilities at airports are typically classified as "landside" or "airside." Airside facilities consist of the airfield and areas that are only accessible by passengers and employees. Landside facilities are accessible to the public.

City of San José's Role in Regulating Activity Levels at the Airport

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The City of San José is the owner and operator of the Airport. However, the Federal Airline Deregulation Act of 1978 prohibits a state or local government's regulation of an air carrier's rates, routes, or services. The City cannot regulate the number of flights or the types of aircraft utilizing the Airport, as long as those flights and aircraft can be reasonably accommodated. In practical terms, this means that the level of activity at the Airport will be directly related to two primary factors: 1) the demand for air transportation services that is largely based on the regional economy and jobs/housing land uses, and 2) whether there are facilities at the Airport that can accommodate the demand. As an example, if an airline determines that there is a market for adding flights to a given destination from San José and the existing facilities (i.e., runways, taxiways, gates, etc.) can accommodate the desired aircraft, the City has no approval authority over the airline's decision to add the flights.

Unlike its ability to directly control activity levels (e.g., population, employees, traffic, noise, etc.) associated with most land use decisions, the City can only indirectly control activity at the Airport by limiting the size and type of facilities. In other words, the City is not deciding whether to increase the annual passenger level from 14.3 million to 22.5 million or air cargo tonnage from 60,000 to 100,000 tons annually; those are outside the City's direct control. Rather, the City in developing the Airport Master Plan, is deciding how to accommodate the increased air passenger, air cargo, and general aviation demand by making improvements to the Airport.

This EIR evaluates the direct and reasonably foreseeable indirect environmental changes that would result from both the forecast increases in air passenger, air cargo, and general aviation activity (not decisions to be made by the City) along with the physical changes proposed to the Airport to accommodate the increased activity (decisions to be made by the City). However, for the reasons explained in Section 8, Alternatives, the 2037 forecasted increase in air passengers, air cargo, and general aviation can be accommodated by the existing facilities at the Airport or would be accommodated by the remaining improvements under the existing Airport Master Plan.

To summarize, the EIR provides objective information about the environmental conditions that would exist under three scenarios, should the 2037 forecasted growth be realized:

- No New Facilities at the Airport (No Project Alternative #1 evaluated in Section 8)
- Construct Remaining Improvements in the existing Airport Master Plan (No Project Alternative #2 evaluated in Section 8)
- Construct Improvements in proposed Major Amendment to the Airport Master Plan (the Project)

The public and the decision-makers can take the environmental considerations of those three scenarios into account. The City can decide to leave the Airport as it currently is, continue to implement the remaining improvements contained in the existing Airport Master Plan, or implement the improvements contained in the proposed amendment to the Airport Master Plan, all while air passenger, air cargo, and general aviation activity levels increase as forecast to 2037.

PROPOSED PROJECT

The proposed Project consists of a major amendment to the approved Airport Master Plan. The proposed amendment would modify the Airport Master Plan in several primary categories:

- Modify certain components of the airfield to reduce the potential for runway incursions
- Update the aviation demand forecasts and shift the horizon year from 2027 to 2037
- Modify future facilities requirements at the Airport to reflect updated demand forecasts

The proposed modifications in each of the primary categories are described below.

Airfield Modifications

The Project proposes to modify certain components of the airfield to reduce the potential for runway incursions and to improve compliance with current FAA design standards. A "runway incursion" is defined as the unauthorized presence of an aircraft, vehicle or person on a surface designated for the landing and take-off of aircraft. Runway incursions are a significant safety concern, the most serious of which have led to collisions, injuries, and fatalities. To reduce this hazard, the FAA has developed a grant-funded program for a Runway Incursion Mitigation/Design Standards Analysis Study (typically referred to as the "RIM Study") at various airports. The purpose of a RIM Study is to identify issues at an airport that could contribute to a runway incursion.

According to the FAA, San José International is one of many in the United States where runway incursions have occurred. This led to the initiation of a RIM Study at the Airport in 2016. The purpose of the RIM Study was to reduce the risk of runway incursions and to conform with current FAA airfield design standards and criteria to ensure a high level of airfield safety.

In June 2018, the RIM Study's technical analysis concluded with selection of a recommended airfield reconfiguration alternative that is part of the proposed amendment to the Airport Master Plan. Specifically, the proposed projects will construct, realign and improve various taxiways, modify aprons, modify aircraft hold positions, modify blast pads, and construct taxiway connectors. Runway 11/29, which has been closed since 2009 and used as a temporary taxiway, will be permanently converted to a taxiway. Other proposed improvements include new pavement markings and the re-naming of taxiways to reduce potential pilot confusion. The specific improvements are as follows:

Project A-17 would extend parallel Taxiway W south from Taxiway B to Runway 12R-30L.

Project A-23 would widen cross Taxiway J at Runway 12R-30L for higher-speed arrivals to exit to the west.

Project A-26 would convert former Runway 11-29 to a new parallel Taxiway V and extend it south to Taxiway C and north to a new cross Taxiway V7.

Project A-27 would construct new cross Taxiway V7 from the north end of new Taxiway V to Taxiway W.

Project A-37 would close existing Taxiway V and replace it with a parallel apron-edge taxilane.

Project A-38 would construct up to seven new taxiway connectors (V1–V7) between the expanded west side apron and new Taxiway V.

Project A-39 would mitigate direct access from the west side apron to Taxiways B, C, & D through pavement marking/painting or removal.

Project A-40 would create up to three new taxiway connectors (W1–W3) between the southwest apron and Taxiway W through pavement marking/painting or removal.

Project A-41 would relocate the existing general aviation run-up pad to southwest apron area.

Project A-42 would relocate the Runway 12R-30L aircraft hold positions on all cross taxiways to current standards.

Project A-43 would widen the Runway 12L-30R blast pads and lengthen the blast pad at the 12L end to current standards.

Project A-44 would realign existing cross Taxiways B-F, H, J, & L between Taxiways Y and Z to mitigate direct access from the east side apron to Runway 12L-30R and rename the realigned segments as Taxiways Z1–Z8 & Z10.

Project A-45 would close existing segments of cross Taxiways B-F, H, J, & L between Taxiways Y and Z through pavement marking/painting or removal.

Project A-46 would narrow segment of existing cross Taxiway B between Taxiway Z and Runway 12L-30R through pavement marking/painting.

Project A-47 would narrow the segment of existing cross Taxiway L between Taxiway Y and Runway 12R-30L through pavement marking/painting.

Project A-48 would close existing segments of cross Taxiways F and H between Runway 12R-30L and Runway 12L-30R through pavement marking/painting.

Project A-49 would add pavement markings to existing parallel Taxiways W and Y, lateral to the adjacent runway displaced thresholds, to visually denote their use as taxiways.

2017 Forecasts and Shift of the Airport Master Plan Horizon Year To 2037

The City updates the demand forecasts for the Airport from time-to-time to account for the latest changes in the aviation industry and in the economy. The updates provide critical information to the Airport regarding planning for the types and sizes of facilities needed to accommodate the demand at a reasonable level of service. Consistent with this planning principle, previous forecasts were completed in 1994, 2005, and 2009, each of which affected the type, size, and timing of many of the projects contained in the Airport Master Plan.

The latest update to the aviation demand forecasts for the Airport was completed in 2017 as part of the above-described RIM Study. Specifically, in order to adequately assess existing and future conditions on the airfield, the RIM Study necessitated the update to the forecasts to year 2037 to achieve a standard 20-year planning horizon. This is the reason for the proposed shift in the Airport Master Plan horizon year from 2027 to 2037.

The 2017 aviation demand forecasts for the Airport for year 2037 were approved by the FAA for use in the RIM Study. Highlights of the 2017 forecasts are as follows:

- The level of air passenger activity at the Airport is projected to continue to rise, reaching 22.5 million annual passengers by year 2037, a 57% increase over 2018. However, air passenger aircraft operations will increase by a lesser amount (36%), reflecting the trend toward the use of larger aircraft.

- Air cargo tonnage is projected to increase at an annual compounded growth rate of 2.4%.

The number of based general aviation aircraft is projected to increase at an annual compounded growth rate of 0.9%. Consistent with the projected national trend, jet aircraft are expected to account for an increasingly larger percentage of based aircraft at the Airport.

Completion of the revised forecasts was followed by a review of the yet-to-be-constructed projects in the Airport Master Plan. The purpose of the review was to determine if changes (i.e., modifications, deletions, additions) to the projects were needed so that the Airport will be able to accommodate the revised forecast demand in a comfortable and efficient manner. Below is a list of those proposed changes.

Proposed Modifications to Airport Master Plan Projects

Terminal Projects

Project T-4 would construct a new short-term, public parking garage (with up to 5,000 spaces) and associated roadway improvements south of the existing Rental Car Garage and opposite the new Terminal B South Concourse (Project T-13).

Project T-6 would remove City office structures that are located at 1311 Airport Boulevard.

Project T-8 would construct a long-term, public parking garage (with up to approximately 6,000 spaces) and associated access improvements at the northeast corner of the Airport adjacent to the U.S. 101/State Route 87 interchange. The proposed site for the garage is presently used as a temporary surface lot for long-term parking. Access to the garage would be via the existing 2-lane bridge.

Project T-13 would expand Terminal B by constructing the South Concourse and adding an additional 14 air carrier gates.[2] Upon completion of Project T-13, there would be a total of 42 air carrier gates within terminals totaling 1,80 million ft^2 at the Airport.

[2] Eight interim gates were constructed at the location of the Terminal B South Concourse. These interim gates will be removed/replaced when the South Concourse is constructed.

Project T-16 would construct new multi-story business hotel south of and adjacent to the new public short-term parking garage (Project T-4). The hotel would be up to 300,000 ft^2 in size including up to 330 guest rooms and 300 parking spaces. Its height would not exceed the height of the adjacent rental car garage, which is approximately 106 feet.

Air Cargo Projects

Project C-2 would construct new cargo airline facilities at or adjacent to the existing east side cargo airline areas, including up to 500,000 ft^2 of ramp, building, and vehicle parking and movement space. The existing air cargo facilities are located in the northeast and southeast portions of the Airport (see Figure 2.4-1).

Project C-3 would relocate belly-freight facilities to new site(s) on the southeast side of Airport, including up to 150,000 ft^2 of ramp, building, and vehicle parking and movement space.

Project C-4 would remove the existing air freight building (1521 Airport Boulevard) and its associated vehicle parking/movement area to allow for the construction of Project T-13.

General Aviation Projects

Project G-5 would allow for general aviation or aviation support facilities to be constructed on a 4.5-acre site located in the southwest corner of the Airport, a site that was formerly leased to the San José State University Department of Aviation.

Project G-6, which has been partially implemented, would allow for the continued establishment of new FBO leaseholds on west side of the Airport.

Project G-8, which has been partially implemented, would continue the expansion of general aviation facilities onto 44 acres located on the northwest side of the Airport.

Project G-9 would expand the west side general aviation apron out to the edge of the new parallel taxilane (Project A-37).

Project G-10 would reconfigure the existing southwest apron tiedown storage facilities to accommodate Projects A-40, A-41, and G-5.

Aviation Support Projects

Project S-1 would expand the Airport's fuel storage facility, which is located on the north side of U.S. 101. The expansion would double the facility's capacity from 2,000,000 gallons to 4,000,000 gallons.

Project S-3 would relocate/expand airport maintenance facilities at new site(s) on the east or west sides of the Airport.

Project S-4 would expand flight kitchen facilities at existing or new sites on the east side of the Airport. Alternatively, those facilities may relocate/expand at off-airport sites.

Project S-5 would relocate/expand airline maintenance-storage facilities at various existing or new sites on the east or west sides of the Airport.

Project S-6 would remove, relocate, or upgrade the existing aviation support facilities that are located on the southeast side of the Airport (1239-1311 Airport Boulevard) to various existing or new sites on the east or west sides of the Airport.

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table S-1 presents the impact conclusions for each of the subject areas evaluated in this EIR. Table S-2 includes a summary of the significant impacts discussed within the body of this EIR and identifies mitigation measures to avoid or reduce those impacts. For a complete description of impacts and mitigation measures, refer to the text in Section 4 of the EIR.

Table S-1: Summary of Environmental Impacts of the Proposed Project

Impact Category	No Impact	Less Than Significant Impact	Less Than Significant Impact with Mitigation	Significant Unavoidable Impact
Aesthetics		◙		
Agriculture and Forestry Resources	◙			
Air Quality				◙
Biological Resources			◙	
Cultural Resources			◙	
Energy		◙		
Geology and Soils		◙		
Greenhouse Gas Emissions				◙
Hazards and Hazardous Materials			◙	
Hydrology and Water Quality		◙		
Land Use and Planning		◙		
Mineral Resources	◙			
Noise		◙		
Population and Housing		◙		
Public Services		◙		
Recreation	◙			
Transportation		◙		
Tribal Cultural Resources		◙		
Utilities and Service Systems		◙		
Wildfire	◙			
Growth Inducement		◙		

Table S-2: Summary of Significant Environmental Impacts and Mitigation Measures	
Significant Impact	**Mitigation and Avoidance Measures**
AIR QUALITY	
Impact AIR-1: Due to significant emissions of NO_x and PM_{10}, the Project would be inconsistent with the Clean Air Plan.	Although the Project includes mitigation measures (refer to MM AIR-2.1 through MM AIR-2.5) and other emissions reduction measures (refer to Table 4.3-5) to reduce emissions to the extent feasible, the Project would result in significant emissions of NO_x and PM_{10}. The Project, therefore, would be inconsistent with the Clean Air Plan. **CONCLUSION: SIGNIFICANT UNAVOIDABLE IMPACT**
Impact AIR-2: The project would result in significant NO_x emissions related to construction and significant NO_x and PM_{10} emissions related to operation.	**Construction Mitigation Measures:** **MM AIR-2.1:** All off-road equipment greater than 25 horsepower used in construction projects at the Airport shall have engines that meet Tier 4 Final off-road emission standards. The City's Director of Planning, Building, and Code Enforcement (or his/her designee) may waive this requirement if presented with documentation that demonstrates that a particular piece of off-road equipment with an engine meeting Tier 4 Final emission standards is not regionally available. **MM AIR-2.2:** Diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than two minutes, at any location, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment (e.g., traffic conditions, safe operating conditions). The contractor shall post legible and visible signs in English, Spanish, and Chinese, in designated queuing areas and at the construction site to remind operators of the 2-minute idling limit. **MM AIR-2.3:** The contractor shall instruct construction workers and equipment operators on the maintenance and tuning of construction equipment and require that such workers and operators properly maintain and tune equipment in accordance with manufacturer specifications. **MM AIR-2.4:** Before starting onsite ground disturbance, demolition, or construction activities, the contractor shall submit a Construction Emissions Minimization Plan to the City's Director of Planning, Building, and Code Enforcement (or his/her designee) for review and approval. The plan shall demonstrate how the contractor will meet the requirements of MM AIR-2.1. The plan shall include estimates of the construction timeline, with a description of each piece of off-road equipment required. The description may include, but is not limited to, equipment type, equipment manufacturer, engine model year, engine certification (Tier rating), horsepower, and expected fuel usage and hours of operation. For off-road equipment using alternative fuels, the description shall also specify the type of alternative fuel being used. The Airport shall ensure that all applicable requirements of the Construction Emissions Minimization Plan have been incorporated into the contract specifications. The plan shall include a certification statement that the contractor agrees to comply fully with the plan. The contractor shall make the Construction Emissions Minimization Plan available to the public for review onsite during working hours. The contractor shall post at the construction site a legible and visible sign summarizing the plan. The sign shall also state that the public may ask to inspect the plan for the project

Table S-2: Summary of Significant Environmental Impacts and Mitigation Measures	
Significant Impact	**Mitigation and Avoidance Measures**
	at any time during working hours and shall explain how to request to inspect the plan. The contractor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right-of-way. **Operational Mitigation Measure:** **MM AIR-2.5:** A minimum of 10 percent of the total number of spaces provided in the proposed short- and long-term parking garages (Projects T-4 and T-8, respectively) will be designed and constructed for electric vehicle charging capability. Even with implementation of mitigation measures MM AIR-2.1 through MM AIR-2.5 and other emissions reduction measures (refer to Table 4.3-5) to reduce emissions to the extent feasible, the project would result in significant NO_x emissions during construction and significant NO_x and PM_{10} emissions during operation. **CONCLUSION: SIGNIFICANT UNAVOIDABLE IMPACT**
Impact AIR-C: The Project would result in cumulatively considerable contributions to significant NO_x impacts during construction and significant NO_x and PM_{10} impacts during operation.	Even with implementation of mitigation measures MM AIR-2.1 through MM AIR-2.5 and other emissions reduction measures (refer to Table 4.3-5) to reduce emissions to the extent feasible, the project would result in cumulatively considerable contributions to significant NO_x impacts during construction and significant NO_x and PM_{10} impacts during operation. **CONCLUSION: SIGNIFICANT UNAVOIDABLE CUMULATIVE IMPACT**
BIOLOGICAL RESOURCES	
Impact BIO-1: If determined to be present, the Project could have a substantial adverse effect on the Congdon's tarplant.	**MM BIO-1.1:** Pre-Activity Surveys. No more than five years prior to initial ground disturbance for any part of the Project that impacts ruderal grassland at the airfield, Fuel Farm, and VOR site, a focused survey for Congdon's tarplant shall be conducted within the project footprint and a 50-foot buffer around the project footprint during the appropriate blooming period (May – November, inclusive). This buffer may be increased by the qualified plant ecologist depending on site-specific conditions and activities planned in the areas but must be at least 50 feet wide. Situations for which a greater buffer may be required include proximity to proposed activities expected to generate large volumes of dust, such as grading; potential for project activities to alter hydrology supporting habitat for the species; or proximity to proposed structures that may shade areas farther than 50 feet away. Surveys are to be conducted in a year with near-average or above-average precipitation, based on National Weather Service data for San Jose. The purpose of the survey would be to assess the presence or absence of Congdon's tarplant. If the target species is not found in the impact area or the identified buffer, then no further mitigation would be warranted. If Congdon's tarplant individuals are found in the impact area or identified, then MM BIO-1.2 and MM BIO-1.3 would be implemented. The survey will be submitted for review and approval by the City's Director of Planning, Building, and Code Enforcement or his/her designee. Surveys for Congdon's tarplant may be conducted over large areas simultaneously (rather than having to be conducted prior to each individual project), but surveys for a particular project area must be performed within five years prior to the start of construction for that project to be valid.

Table S-2: Summary of Significant Environmental Impacts and Mitigation Measures	
Significant Impact	**Mitigation and Avoidance Measures**
	MM BIO-1.2: Avoidance Buffers. To the extent feasible, and in consultation with a qualified plant ecologist, the City would design and construct the Project to completely avoid impacts on all populations of Congdon's tarplant within the project footprints or within the identified buffers of the impact areas. Avoided Congdon's tarplant populations would be protected by establishing and observing the identified buffer between plant populations and the impact area. All such populations located in the impact area or the identified buffer, and their associated designated avoidance areas, would be clearly depicted on any construction plans. In addition, prior to initial ground disturbance or vegetation removal, the limits of the identified buffer around special-status plants to be avoided would be marked in the field (e.g., with flagging, fencing, paint, or other means appropriate for the site in question). This marking would be maintained intact and in good condition throughout project-related construction activities. If complete avoidance is not feasible and more than 10% of a population (by occupied area or individuals) would be impacted as determined by a qualified plant ecologist, MM BIO-1.3 would be implemented. **MM BIO-1.3:** Preserve and Manage Mitigation Populations. If avoidance of Congdon's tarplant is not feasible and more than 10% of the population would be impacted, compensatory mitigation would be provided via the preservation, enhancement, and management of occupied habitat for the species, or the creation and management of a new population. To compensate for impacts on Congdon's tarplant, off-site habitat occupied by the affected species would be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and at least one occupied acre preserved for each occupied acre affected), for any impact over the 10% significance threshold. Alternately, seed from the population to be impacted may be harvested and used either to expand an existing population (by a similar number/occupied area to compensate for impacts to Condgon's tarplant beyond the 10% significance threshold) or establish an entirely new population in suitable habitat. The compensation area could be within the Airport grounds, for example within one of the burrowing owl mitigation sites, or off-site. Additional criteria for the identification of suitable mitigation sites, success criteria for the mitigation, and mitigation management criteria are listed in Section 6.1.2 of Appendix E. **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**
Impact BIO-2: If determined to be present, the Project could have a substantial adverse effect on nesting birds.	**MM BIO-2.1:** Avoidance and Inhibition of Nesting. Construction and tree removal/pruning activities shall be scheduled to avoid the nesting season. Tree removal and/or pruning shall be completed before the start of the nesting season to help preclude nesting. The nesting season for most birds and raptors in the San Francisco Bay Area extends from February 1 through August 31. **MM BIO-2.2:** Preconstruction Survey(s). If it is not possible to schedule construction activities during the period of September 1 through January 31, then a qualified ornithologist shall conduct a preconstruction survey for nesting raptors and other migratory birds within on-site trees as well as all trees within 250 feet of the site to identify active bird nests that may be disturbed during project construction. This survey shall be completed no more than fourteen days

Table S-2: Summary of Significant Environmental Impacts and Mitigation Measures	
Significant Impact	**Mitigation and Avoidance Measures**
	prior to the initiation of demolition/construction activities (including tree removal and pruning). During this survey, the ornithologist shall inspect all trees and other possible nesting habitats in and immediately adjacent to the construction areas for nests. If the survey does not identify any nesting birds that would be affected by construction activities, no further mitigation is required. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist (in consultation with CDFW) shall designate a construction-free buffer zone to be established around the nest to ensure that no nests of species protected by the MBTA and California Fish and Game Code would be disturbed during construction activities. The buffer shall remain in place until a qualified ornithologist has determined that the nest is no longer active. **MM BIO-2.3:** Reporting. A final report on nesting birds and raptors, including survey methodology, survey date(s), map of identified active nests (if any), and protection measures (if required), shall be submitted and approved by the City's Director of Planning, Building, and Code Enforcement or his/her designee prior to the start of grading. **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**
Impact BIO-3: If determined to be present, the Project could have a substantial adverse effect on roosting bats.	**MM BIO-3.1:** Conduct Pre-Activity Surveys for Roosting Bats. A Pre-activity survey for roosting bats shall be conducted prior to any removal or renovation of hangar buildings with metal siding or buildings with closed areas such as an attic space, particularly those that are unoccupied. No pre-activity survey is required for buildings without attics or metal siding. The survey shall be conducted by a qualified bat biologist. If no active roosts are found, then no further action is warranted. If a roost is present, a qualified bat biologist shall determine the species and number of individuals present. **MM BIO-3.2:** Avoid Disturbance of Active Roosts. If an occupied roost is found in a structure that would be disturbed or removed by proposed activities, the Project may be redesigned to avoid the disturbance of the structure. If the roost is unoccupied at the time of the survey, the Airport may choose to install bat exclusion devices to prevent bats from taking up occupancy of the structure prior to the onset of the proposed activity. If avoidance is not feasible, MM BIO-3.3 and MM BIO-3.4 shall be implemented. **MM BIO-3.3:** Avoid Disturbance of Maternity Roosts. If an active maternity roost is present within the building to be demolished and the Project cannot be redesigned to avoid removal or disturbance of the occupied roost, disturbance shall not take place during the maternity season (as determined by the qualified bat biologist, but roughly Mar 15 to Aug 31), and an appropriate disturbance-free buffer zone (also determined by the qualified bat biologist) shall be observed during this period to avoid disturbing the roosting bats. **MM BIO-3.4:** Exclude Bats Prior to Disturbance. If disturbance of an active non-breeding roost cannot be avoided, the individuals shall be safely evicted outside the maternity season (as determined by the qualified bat biologist) between approximately August 1 and March 15. Bats may be evicted through exclusion after notifying the CDFW. Exclusion methods may include the

Table S-2: Summary of Significant Environmental Impacts and Mitigation Measures	
Significant Impact	**Mitigation and Avoidance Measures**
	installation of one-way doors and/or use of ultrasonic deterrence devices. One-way doors and/or deterrence devices should be left in place for a minimum of two weeks with a minimum of five fair-weather nights with no rainfall and temperatures no colder than 50°F. **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**
Impact BIO-4: The Project would have a substantial adverse effect on the burrowing owl.	**MM BIO-4.1:** Provide Compensatory Mitigation for Permanent Impacts on Burrowing Owl Nesting Habitat. Compensatory mitigation shall be provided for permanent loss of 32.4 acres of occupied burrowing owl nesting habitat, as well as for the degradation of the remaining 83.4 acres of nesting and roosting habitat at the airfield and the expected increase in annual mortality of burrowing owls due to collisions with aircraft following Amendment implementation. Compensatory mitigation shall be provided via the payment of VHP burrowing owl fees for all 32.4 acres of direct, permanent impacts on occupied habitat. Because the Airport is located within the Habitat Plan area, even though airport improvement projects are not considered "covered activities" under the Habitat Plan, the payment of Habitat Plan burrowing owl fees would be appropriate in lieu of providing on-site and/or off-site mitigation. This mitigation approach would be consistent with the Voluntary Fee Payments Policy of the Santa Clara Valley Habitat Agency, which states that such voluntary burrowing owl fees paid as mitigation "will be applied toward burrowing owl management agreements, burrowing owl habitat management and monitoring, as well as burrowing owl habitat restoration and land acquisition." Payment of the full, per-acre Habitat Plan burrowing owl fee for all 32.4 acres of direct permanent impacts would satisfy MM BIO-4.1. Compensatory mitigation for impacts to burrowing owls (i.e., payment of VHP burrowing owl fees) may be phased in accordance with phasing of impacts, so that the amount of mitigation provided for a phased Project activity equals or exceeds that required based on the acreage of burrowing owl habitat impacted~~s~~ by that activity; the mitigation for impacts of a given phased Project activity shall be provided prior to those impacts occurring. ~~However, compensatory mitigation for impacts to a certain acreage of burrowing owl habitat must be implemented prior to those impacts occurring.~~ **MM BIO-4.2:** Update and Implement the BOMP. The existing BOMP was developed based on 1997 site conditions and owl management and monitoring methodologies. To improve management for burrowing owls at the Airport, the Airport will implement the following updates to Section 3.2 of the BOMP: • Conduct Preconstruction Surveys for Burrowing Owls. The existing BOMP requires preconstruction surveys for burrowing owls and suitable owl burrows prior to ground-disturbing activities, with one survey occurring during the prior fall/winter season and one survey occurring within 30 days of the start of construction. However, if the preconstruction survey is conducted 30 days in advance of the proposed activity, there is some potential for owls to change locations between the survey and the activity and potentially occur within the ground disturbance area, or close enough to this area to be disturbed by the activity. In order to ensure that take avoidance measures are successful, the BOMP will be updated to require preconstruction surveys to be conducted per Habitat Plan survey requirements for take avoidance,

Table S-2: Summary of Significant Environmental Impacts and Mitigation Measures	
Significant Impact	**Mitigation and Avoidance Measures**
	which represent the latest methodology that is accepted by resource agencies. Preconstruction surveys for burrowing owls would be conducted prior to the initiation of all Project construction activities within suitable burrowing owl nesting and roosting habitat (i.e., ruderal grassland habitat with burrows of California ground squirrels) at the airfield, or within 250 feet of this habitat. During the initial site visit, a qualified biologist would survey the entire activity area and (to the extent that access allows) areas within 250 feet by walking transects with centerlines no more than 50 feet apart and ensure complete visual coverage and looking for suitable burrows that could be used by burrowing owls for nesting or roosting. If no suitable burrowing owl habitat (i.e., ruderal grasslands with burrows of California ground squirrels) is present, no additional surveys are required. If suitable burrows are determined to be present within 250 feet of the work area, a qualified biologist would conduct a minimum of two additional surveys to determine whether owls are present in areas where they could be affected by proposed activities. The surveys would last a minimum of three hours, beginning one hour before sunrise and continuing until 2 hours after sunrise or beginning 2 hours before sunset and continuing until 1 hour after sunset. Additional time may be required if the work area is very large. The first survey may occur up to 14 days prior to the start of construction activities in any given area, and the final survey would be conducted within two days prior to the start of construction activities. • Implement Buffer Zones for Burrowing Owls. The existing BOMP does not include the option to maintain disturbance-free buffers around active owl burrows (rather, the eviction of owls from burrows within and near work areas is assumed). This measure will minimize project impacts on owls by providing the option to avoid owl burrows, rather than requiring the eviction of any owls that may be present near work areas. If burrowing owls are detected during the pre-activity survey, a 250-foot buffer, within which no newly initiated construction-related activities would be permissible, would be maintained between construction activities and occupied burrows. Owls present between February 1 and August 31 would be assumed to be nesting, and the 250-foot protected area would remain in effect until August 31. • Monitor Owls During Construction. If maintaining a 250-foot buffer around active owl burrows is not feasible, the buffer may be reduced if (1) the nest is not disturbed, and (2) the City develops an avoidance, minimization, and monitoring plan that would be reviewed and approved by CDFW and USFWS prior to project commencement. The plan would include the following measures: o A qualified biologist would monitor the owls for at least three days prior to construction as well as during construction. o If the biologist observes no change in the owls' nesting and foraging behavior, construction activities may proceed. o If changes in the owls' behaviors as a result of work activities are observed, activities would cease within 250 feet of the active burrow location(s). Work activities may resume when the burrows are no

Table S-2: Summary of Significant Environmental Impacts and Mitigation Measures	
Significant Impact	**Mitigation and Avoidance Measures**
	longer occupied. If monitoring indicates that the burrow is no longer in use by owls, the disturbance-free buffer may be removed. • Passive Relocation[3]. If construction activities would directly impact occupied burrows, a qualified biologist would passively evict owls from burrows during the non-nesting season (September 1 to January 31). No burrowing owls would be evicted during the nesting season (February 1 through August 31) except with CDFW's concurrence that evidence demonstrates that nesting is not actively occurring (e.g., because the owls have not yet begun nesting early in the season, or because the young have already fledged late in the season). Eviction would occur through the use of one-way doors inserted into the occupied burrow and all burrows within impact areas that are within 250 feet of the occupied burrow (to prevent occupation of other burrows that would be impacted). One-way doors would be installed by a qualified biologist and left in place for at least 48 hours before they are removed. The burrows would then be backfilled to prevent re- occupation. Although relocation of owls may be necessary to avoid the direct injury or mortality of owls during construction, relocated owls may suffer predation, competition with other owls, or reduced health or reproductive success as a result of being relegated to more marginal habitat. However, the benefits of such relocation, in terms of avoiding direct injury or mortality, would outweigh any adverse effects. • Compensatory Mitigation. Because the number of burrows that are present on the airfield does not appear to limit the existing population of owls at the airfield, compensatory mitigation for the eviction of owls for would be provided as described in MM BIO-4.1 above rather than on a case-by-case basis each time an owl is evicted from a burrow. This mitigation would maintain sufficient numbers of burrows in the mitigation areas over the long term to provide habitat for any owls that may be evicted from the airfield as a result of the Project. The City would continue to implement the BOMP with the updates described above. **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**
Impact BIO-5: The Project would have a substantial adverse effect on habitat utilized by the Bay checkerspot butterfly.	**MM BIO-5.1:** Although the Airport is owned and operated by the City of San José, a Local Partner in the Habitat Plan, and the Airport is located within the boundaries of Habitat Plan area, improvement projects at the Airport are excluded as covered activities under the Habitat Plan. Irrespective of this fact, the City as CEQA Lead Agency acknowledges the nitrogen deposition impacts of the Project and is committing to pay the nitrogen deposition fee that applies to covered activities, based on new daily vehicle trips. [Note: Per Table 6 in the traffic analysis prepared as part of this EIR, the Project will generate 29,332 new daily vehicle trips.] According to the Santa Clara Valley Habitat Agency, the fees collected from covered activities do not fully cover the costs related to mitigating nitrogen deposition impacts due to new development. Therefore, the

[3] The passive relocation of burrowing owls is not currently permitted under the VHP because a positive growth trend in the owls' regional population has not yet been achieved. However, passive relocation is included here as a mitigation measure here because (1) Airport projects are not covered under the VHP, and (2) the proposed Amendment improvements are necessary to address aviation safety concerns at the Airport.

Table S-2: Summary of Significant Environmental Impacts and Mitigation Measures	
Significant Impact	**Mitigation and Avoidance Measures**
	Habitat Agency accepts fees from non-covered activities and states that "nitrogen deposition voluntary fee payments will be applied toward land acquisition, management, and monitoring for Bay checkerspot butterfly and serpentine covered plant species." **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**
Impact BIO-13: The Project would conflict with local policies and ordinances protecting biological resources, specifically in relation to riparian buffer encroachment and bird collisions with buildings.	**MM BIO-13.1:** Detailed plans for the structures that may be constructed in or near the 100-foot riparian buffers along the Guadalupe River have not yet been prepared. However, the City will strive to design the parking garage ~~and fuel farm tanks~~ in such a way that encroachment into the riparian buffer can be avoided altogether. The fuel farm tanks shall be located outside of the riparian buffer. If the Airport needs to encroach into the riparian buffer, then the extent to which encroachment occurs (as determined both by the distance between the proposed development and the riparian baseline and by the acreage of encroachment into the buffer) should be minimized. If encroachment is avoided, so that no new, more intensive types of development occur within 100 feet of the buffer baseline, or any closer to the buffer baseline than existing development already occurs (e.g., buildings constructed within the 100-foot setback where only paved areas are currently present), no further mitigation for riparian buffer encroachment impacts would be necessary. If any encroachment is proposed, MM BIO-13.2 would be implemented to reduce the residual impact to less than significant levels. **MM BIO-13.2:** If encroachment into the riparian buffer cannot be avoided, compensatory mitigation shall be provided to offset the impacts on the ecological functions and values of the riparian corridor. Such compensatory mitigation would be provided in one of two ways: 1. At a minimum ratio of 1:1 (compensation:impact), on an acreage basis, existing development (e.g., buildings or hardscape) along the Guadalupe River, either on-site or off-site, would be removed, and the developed area restored to native habitats and dedicated to natural habitat (rather than active human uses such as urban park). For example, if a portion of the study area were subject to riparian buffer encroachment, but a commensurate acreage of existing developed areas adjoining the Guadalupe River levee in other parts of the study area were restored to native habitat, that would compensate for the riparian buffer encroachment impact. 2. At a minimum ratio of 2.5:1 (compensation:impact) on an acreage basis, riparian woodland habitat would be restored or created as described below to provide ecological functions and values that offset those lost due to riparian buffer encroachment. To compensate for encroachment into the riparian buffer, riparian woodland habitat would be restored or created at a minimum ratio of 2.5:1 (compensation:impact) on an acreage basis, based on canopy area. This ratio is not higher due to the moderately high quality of the riparian woodland adjacent to the study area relative to more extensive, less fragmented riparian woodland elsewhere in the region, but is not lower due to the temporal loss of riparian functions and values that would result from the lag between impacts to the woodland adjacent to the study area and maturation of the mitigation habitat.

Table S-2: Summary of Significant Environmental Impacts and Mitigation Measures	
Significant Impact	**Mitigation and Avoidance Measures**
	Compensation would be provided by planting riparian habitat so as to achieve the 2.5:1 ratio somewhere in the Santa Clara Valley, preferably along the Guadalupe River but along another stream if appropriate. Mitigation habitat may be hydrologically isolated from the stream in question as long as it is located within 300 feet of the stream, is not separated from the stream by development other than a trail or levee, and is dominated by native riparian trees. **MM BIO-13.3:** Implement Bird-Safe Building Design. Due to the potential for buildings within the study area to result in high numbers of bird collisions, the Project would implement the following bird-safe building design features for all buildings constructed or modified within 300 feet of the Guadalupe River: • The use of glass on the façades of new buildings and additions shall be minimized to the extent feasible. • No more than 10% of the surface area of the façades of buildings that face the Guadalupe River shall have untreated glazing between the ground and 60 feet above ground. Bird-safe glazing treatments may include fritting, netting, permanent stencils, frosted glass, exterior screens, and/or physical grids placed on the exterior of glazing or ultraviolet patterns visible to birds. Vertical elements of the window patterns would be at least ¼-inch wide at a maximum spacing of 4 inches, or have horizontal elements at least 1/8-inch wide at a maximum spacing of 2 inches. • No more than 10% of the surface area of façades facing the Guadalupe River and/or façade areas within 12 vertical feet above and/or below landscaped terraces shall have untreated glazing. • All glazing panels at corners of façades that face the Guadalupe River between the ground and 60 feet above ground and/or within 12 vertical feet above and/or below landscaped terraces (regardless of their height above ground) would be 100% treated. • Exterior lighting on the sides of buildings facing the Guadalupe River would be minimized to the extent feasible, except as needed for safety. All exterior lights shall be directed toward facilities on the project site (e.g., rather than directed upward or outward) and shielded to ensure that light is not directed outward towards the Guadalupe River. • Exterior up-lighting shall not be used. • Occupancy sensors or other switch control devices shall be installed on interior lights, with the exception of emergency lights or lights needed for safety purposes. **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**
Impact BIO-14: The Project would conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other	With the implementation of MM BIO 4.1, MM BIO-4.2, and MM BIO 5.1, the Project would be consistent with the goals of the Habitat Plan. **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**

Table S-2: Summary of Significant Environmental Impacts and Mitigation Measures	
Significant Impact	**Mitigation and Avoidance Measures**
approved local, regional, or state habitat conservation plan, specifically in relation to burrowing owls and nitrogen deposition.	
Impact BIO-C: The Project could result in a cumulatively considerable contribution to a significant biological resources impact.	With implementation of mitigation measures and standard permit conditions, the Project would not result in a cumulatively considerable contribution to a significant biological resources impact. **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**
CULTURAL RESOURCES	
Impact CUL-2: Portions of the Airport are considered archaeologically sensitive and therefore the construction of the Project could impact buried archaeological resources.	**MM CUL-2.1:** The archaeological monitoring program that is currently in effect at the Airport will be continued by the City as part of the Project. Under this program, a qualified archaeologist will monitor all subsurface construction activity for the identified projects located within designated archaeological sensitive areas. If prehistoric or historic archaeological resources are uncovered during construction activities, the monitoring archaeologist will require that work be discontinued within a 100-foot radius of the find. A report evaluating the find and identifying mitigation for impacts should be prepared by the archaeologist and submitted to the City's Director of Planning, Building, and Code Enforcement and the Director of the Airport. **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**
Impact CUL-3: Directly related to impact CUL-2, above, if any buried archaeological resources are impacted by the Project, such resources could contain human remains.	**MM CUL-3.1:** In the event that human remains are discovered during excavation and/or grading of the site, all activity within a 100-foot radius of the find shall be stopped. The Santa Clara County Coroner shall be notified and make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American, the Coroner will notify the Native American Heritage Commission (NAHC) immediately. Once the NAHC identifies the most likely descendants, the descendants will make recommendations regarding proper burial, which will be implemented in accordance with Section 15064.5(e) of CEQA Guidelines. **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**
GREENHOUSE GAS EMISSIONS	
Impact GHG-1: The Project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. .	**MM GHG-1.1:** The Airport shall develop and implement a phased carbon management program that is consistent with the standards of ACI "Level 3+" Airport Carbon Accreditation Program, or equivalent, including calculation of annual carbon emissions from Airport activity, identifying emissions reduction targets, tracking progress toward achieving effective carbon management procedures, and publishing ~~an annual~~ biennial carbon footprint report as a component of the Airport's broader environmental sustainability program. Even with implementation of MM GHG-1.1 and other emissions reduction programs described above, the Project's incremental increase in GHG emissions

Table S-2: Summary of Significant Environmental Impacts and Mitigation Measures	
Significant Impact	**Mitigation and Avoidance Measures**
	is considered significant and unavoidable due to forecasted increases in aircraft activity beyond the City's control in operating the Airport. **CONCLUSION: SIGNIFICANT UNAVOIDABLE IMPACT**
Impact GHG-2: The Project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions.	Even with implementation of MM GHG-1.1 and other emissions reduction measures, the Project's incremental increase in GHG emissions from aircraft activity serving the region as a whole would conflict with statewide emission reduction targets, resulting in a significant unavoidable impact. **CONCLUSION: SIGNIFICANT UNAVOIDABLE IMPACT**
HAZARDS AND HAZARDOUS MATERIALS	
Impact HAZ-1: The proposed expanded fuel storage facility could create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials.	**MM HAZ-1.1:** The Project shall be designed, constructed, and maintained in compliance with all applicable regulatory standards and policies, including provisions for full on-site containment, leak detection systems, and cathodic protection. In addition, a 100-foot setback from the Guadalupe River will be maintained. The Airport and Airport tenants will continue to implement its program to minimize accident risks at the fuel handling and storage facilities. **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**
Impact HAZ-2: The Project could create a significant risk if hazardous materials in sufficient concentrations are present in soils and those materials are, in turn, released into the environment during construction.	**MM HAZ-2.1:** Prior to beginning construction, the Airport shall investigate construction work areas to characterize soil and groundwater quality at potentially contaminated sites by completing a limited soil and groundwater investigation. Samples will be collected from each of the proposed work areas that will be disturbed during project construction and to the depth of the planned excavation. Soil samples will be analyzed for any chemical of concern including, but not limited to, petroleum (as gasoline, diesel, and waste oil), Title 22 metals, Organochlorine Pesticides, and Volatile Organic Compounds to evaluate the potential presence of contamination. Groundwater samples will be collected if construction projects are anticipated to require dewatering. The results of these soil and groundwater investigations will be included in the Site Management Plan per MM HAZ-2.2. **MM HAZ-2.2:** The City will require the construction contractor for each project to develop and implement a Site Management Plan (SMP) or similar document to manage the cleanup of contaminated soils. If applicable, a SMP shall be prepared prior to construction to reduce or eliminate exposure risk to human health and the environment, specifically, potential risks associated with the presence of contaminated soils. At a minimum, the SMP shall include the following: 1) results from any limited soil and groundwater sampling conducted per MM HAZ-2.1; 2) stockpile management including dust control, sampling, stormwater pollution prevention and the installation of BMPs; 3) proper disposal procedures of contaminated materials; 4) monitoring, reporting, and regulatory oversight notifications; and 5) a health and safety plan for each contractor and subcontractor working at the site that addresses the safety and health hazards of each phase of site operations with the requirements and procedures for employee protection. The health and safety plan will also outline proper soil and/or groundwater handling procedures and health and safety requirements to minimize worker and public exposure to contaminated soil and/or groundwater during construction. **CONCLUSION: LESS THAN SIGNIFICANT IMPACT WITH MITIGATION**

SUMMARY OF ALTERNATIVES TO THE PROPOSED PROJECT

The California Environmental Quality Act (CEQA) requires that an EIR identify alternatives to the project as proposed. The CEQA Guidelines state that an EIR must identify alternatives that would feasibly attain the most basic objectives of the project, but avoid or substantially lessen significant environmental effects, or further reduce impacts that are considered less than significant with the incorporation of mitigation. Table S-3 lists the five alternatives that were evaluated in this EIR.

Table S-3: List of Alternatives Evaluated

Alternative Name	Feasible? [a]
Use of Moffett Federal Airfield	No
Relocate San José Airport to New Airport Site in the Region	No
Accommodate Air Transportation Demand at Other Bay Area Airports	No
No Project Alternative #1: No New Facilities at the Airport	Yes
No Project Alternative #2: Existing Airport Master Plan	Yes

[a] Under CEQA, "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. [CEQA Guidelines §15364]

A summary of project alternatives follows. A full analysis of project alternatives is provided in Section 8, *Alternatives*.

Use of Moffett Federal Airfield

This alternative would result in the relocation of all operations at San José Airport to Moffett Federal Airfield (Moffett), which is adjacent to the Cities of Mountain View and Sunnyvale. Formerly operated by the U.S. Navy as Moffett Field Naval Air Station, the 952-acre airport was transferred to the National Aeronautics and Space Administration (NASA) in 1994 and, with minor exceptions, remains closed to civil aviation use.

For purposes of analysis, it is assumed that Moffett could accommodate the demand for air transportation that is forecasted for San José in 2037. Therefore, this alternative could be characterized as being the same as the Project but in a different location.

The operational environmental impacts associated with the development of a civil airport at Moffett that would accommodate San José's air passenger, air cargo, and general aviation demand would be similar to those identified for the Project. The primary difference between the use of Moffett and the Project would be the location where the impacts would occur. For example, the noise impacts associated with aircraft operations would be moved from the neighborhoods near San José Airport to the neighborhoods near Moffett. Similarly, airport-related traffic impacts would move from roadways in San José and Santa Clara to those in Sunnyvale and Mountain View. Burrowing owls are present at

both San José Airport and Moffett, so moving operations from San José to Moffett would not avoid impacts to that species. Again, this is a transference of impacts from one location to another.

This alternative was determined to be infeasible for the following reasons:

- The abandonment of San José Airport as an airport serving the greater San José area would have significant economic and land use implications. Many of the businesses that existing in the vicinity of the Airport are located there to take advantage of doing business near the Airport. Relocation of San José Airport to Moffett could affect the viability of many of these businesses and could result in the relocation of many businesses to Mountain View or Sunnyvale. In addition, decisions regarding the future land uses of the Airport property would be required, and the environmental impacts of such land use decisions could be significant.

- In the mid-1990's, NASA proposed opening Moffett to regular limited civil aviation use, specifically for air cargo operations. That proposal was withdrawn after strong community opposition, and Moffett remains a restricted federal facility. In any case, the City has no jurisdiction over the use of Moffett and it is not for sale.

- The relocation of air transportation operations to Moffett would not meet the objective of accommodating current and future demand for commercial aviation services at San José Airport. In addition, while this alternative would eliminate the significant impacts of the Project at San José, the same impacts would simply be transferred approximately six miles to the west to Moffett.

Relocate San José Airport to New Airport Site in the Region

This alternative would result in the development of a new airport at another location in the greater San José area. Such a location is speculative since no location has been identified by the FAA or any regional planning agencies such as MTC. A new airport in the greater San José area would require at least 1,000 acres of property (i.e., at least the same size as San José Airport) and likely would require more property to ensure that land use compatibility and noise impacts are adequately addressed.

For purposes of analysis, it is assumed that a new airport could accommodate the demand for air transportation that is forecasted for San José in 2037. Therefore, this alternative could be characterized as being the same as the Project but in a different location.

The operational environmental impacts associated with the development of a new airport that would accommodate San José's air passenger, air cargo, and general aviation demand would be similar to those of the Project. The primary difference would be the location where the impacts would occur. For example, the noise impacts associated with aircraft operations would be moved from the neighborhoods near San José Airport to the neighborhoods near the new airport. Similarly, airport-related traffic impacts would move from roadways in San José and Santa Clara to those near the new airport. Again, this is a transference of impacts from one location to another.

Any vacant site that would be of sufficient size to accommodate the relocation of the Airport would likely involve a substantial loss of agricultural and open space lands, as well as impacts to any biological resources at that location. Further, when compared to the existing Airport location, a

relocated facility would be more distant from residents and businesses it serves, which would increase VMT, energy consumption, and emissions of pollutants.

This alternative was determined to be infeasible for the following reasons:

- The abandonment of San José Airport as an airport serving the greater San José area would have significant economic and land use implications. Many of the businesses existing in the vicinity of the Airport are located there to take advantage of doing business near the Airport. Relocation to a new airport could affect the viability of many of these businesses and could result in the relocation of many businesses. In addition, decisions regarding the future land uses of the Airport property would be required, and the environmental impacts of such land use decisions could be significant.

- This alternative is inconsistent with the project objective of continuing to provide aviation services at San José Airport. The existing facilities at San José Airport represent a substantial public investment. No planning activity is underway or proposed by any federal, state, regional, or local agency regarding development of a replacement for San José Airport at a different location. Selection of an alternative airport location would require extensive design and environmental study well beyond the scope of the Project and would take years to implement even if a suitable site was ultimately selected and secured. Further, the environmental impacts of developing a major airport at a new location would be significantly greater than the impacts of the Project.

Accommodate Air Transportation Demand at Other Bay Area Airports

This alternative would relocate all operations at San José Airport to either Metropolitan Oakland International Airport (OAK) or San Francisco International Airport (SFO). For purposes of analysis, it is assumed that OAK or SFO or a combination of the two airports could accommodate San José's projected 2037 demand. This alternative does not acknowledge whether the airfield or landside capacity at either airport could accommodate the existing and projected demand for San José and neighboring cities in Santa Clara County while accommodating projected demand in their respective service areas.

The operational environmental impacts associated with the redistribution of San José operations to OAK or SFO would further increase the environmental impacts associated with the operation of those two airports. While aircraft-generated noise impacts would be eliminated in the vicinity of San José Airport, noise impacts at OAK or SFO would increase as additional flights are added at those facilities. In addition, the number of vehicle miles traveled (VMT) in the Bay Area would increase as air passengers in the greater San José area would be required to travel 30+ miles farther to use OAK or SFO. This would translate into increased air pollutant emissions within the air basin.

This alternative was determined to be infeasible for the following reasons:

- The abandonment of San José Airport as an airport serving the greater San José area would have significant economic and land use implications. Many of the businesses existing in the vicinity of the Airport are located there to take advantage of doing business near the Airport. Redistribution of air transportation services to OAK or SFO could affect the viability of many

of these businesses and could result in the relocation of many businesses to areas around OAK or SFO. In addition, decisions regarding the future land uses of the Airport property would be required, and the environmental impacts of such land use decisions could be significant.

- The redistribution of air transportation activities from San José to either OAK or SFO would not meet the objective of accommodating current and future demand for commercial air transportation services at San José Airport. The City has no jurisdiction over the use of OAK or SFO. Further, while this alternative would eliminate the significant impacts of the Project at San José, it would result in the transfer of those same impacts to OAK and/or SFO.

No Project Alternative #1: No New Facilities at the Airport

No Project Alternative #1 would consist of no new or expanded or altered facilities at the Airport beyond those that currently exist or are under construction. None of the improvements listed in Table 3.3-1 would be implemented. None of the future improvements to the airfield would occur, the airfield modifications recommended by the RIM Study would not be implemented, and existing Runway 11/29 would remain. Other key improvement projects that would not be constructed would be the South Concourse of Terminal B, the final phase of the long-term parking garage, a short-term parking garage near Terminal B, a new 330-room business hotel, new air cargo facilities, new belly freight facilities, and the expansion of the fuel storage facility.

It is important to note that, although No Project Alternative #1 would consist of no new facilities, activity levels at the Airport are forecasted to continue to increase over 2018/baseline conditions. In other words, activity levels will increase irrespective of any decision to approve or disapprove the Project because the forecasts are based on projected economic, demographic, and market conditions in the region.[4] So long as there is a market for air transportation services and there are facilities to accommodate the demand, activity will continue to increase. For an expanded discussion of this topic, including the City's inability to directly regulate activity levels at the Airport pursuant to the Airline Deregulation Act of 1978, please see the discussion at the beginning of Section 3.0, *Project Description*.

In light of the above, the relevant question is how much of the forecasted demand for air transportation services in 2037 can be accommodated by the existing facilities at the Airport. To address this question, an analysis was undertaken by HNTB, an aviation planning firm with expertise in airport facilities. The analysis, a copy of which is Appendix L of this EIR, evaluated the capacity of the Airport's existing facilities to determine if their size would result in some portion of the demand not being served. The analysis concluded that the projected 2037 demand can be accommodated by the Airport's existing facilities, albeit under congested conditions with delays and poor levels of service[5]. In practical terms, this means that the 2037 forecasted activity levels are assumed to occur under No Project Alternative #1.

[4] Aviation forecasts are "unconstrained," meaning that they reflect the demand for air transportation irrespective of whether there are facilities that can accommodate the demand. This is similar to traffic demand forecasts. Unconstrained demand is important because it enables planners and designers to develop facilities that will have the capacity to serve the demand in a comfortable and efficient manner (i.e., at an acceptable level of service).

[5] Examples of poor levels of service include longer wait times at security, delays associated with aircraft waiting for available gates, crowded boarding areas, longer waits at baggage claims, lack of available parking, etc.

Per the above discussion, the 2037 activity levels at the Airport will be the same under both No Project Alternative #1 and Project conditions. Specifically, under both scenarios there will be the same number of passengers and flights, the same volume of air cargo, and the same level of general aviation activity. Therefore, many of the environmental impacts would be similar, with the differences being as follows:

- For noise, since Runway 11/29 will be in use under No Project Alternative #1 and will be removed under the Project conditions, there will be a very slight shift in noise. This negligible shift is reflected in the data provided in Tables 8.5-1 and 8.5-2. In Table 8.5-1, CNEL values would be the same at all reference grid point locations except #17 where the change is 0.1 dB, which is imperceptible. Similarly, Table 8.5-2 shows that the difference in total acreage within the 65-dB CNEL contour between the Project and No Project Alternative #1 would be only 12 acres, a change of one half of one percent.

- For criteria air pollutants and GHGs, the efficiencies associated with the new and expanded facilities of the Project will result in a reduction of those emissions, as compared to No Project Alternative #1. For example, emissions from aircraft during the taxiing phases of flights will be lower under the Project because the proposed airfield improvements will reduce delay; this reduction in taxiing time due to the Project is quantified in Table 3.3-5. Similarly, constructing an on-Airport business hotel under the Project would likely reduce vehicle trips and associated emissions, as compared to under No Project Alternative #1 where trips to/from off-Airport locations would occur.

- None of the construction-related impacts of the Project would occur under No Project Alternative #1.

- The No Project Alternative #1 would avoid the impacts of the Project to the burrowing owl because no new facilities that would impact the owl and its habitat would be constructed.

No Project Alternative #1 would not meet the objective of reasonably and efficiently accommodating existing and future for air transportation services at the Airport. As stated previously, the projected 2037 demand could be accommodated by the Airport's existing facilities, albeit under congested conditions with delays and poor levels of service.

Without the improvements to the airfield that are part of the Project, the airfield would not function efficiently under No Project Alternative #1. The lack of adequate taxiways that provide connections between runways, ramps, and aircraft parking areas would make the taxiing phases of flight more circuitous with resulting increases in delay. Further, No Project Alternative #1 would not include any of the improvements to the airfield recommended by the RIM Study, such improvements that would enhance safety.

No Project Alternative #2: Existing Airport Master Plan

No Project Alternative #2 would consist of building the remaining, yet-to-be-constructed capital improvement projects that are identified in the existing Airport Master Plan. Those improvement projects are listed in Table 3.3-1, where they are compared side-by-side to those improvements that would be constructed under the proposed Project. As can be seen from Table 3.3-1, many of the

improvements listed under the existing Airport Master Plan are similar to those listed under the proposed Project.

Per the discussion above, the 2037 activity levels at the Airport will be the same under both No Project Alternative #2 and Project conditions. Specifically, under both scenarios there will be the same number of passengers and flights, the same volume of air cargo, and the same level of general aviation activity. Therefore, many of the environmental impacts would be similar, with the differences being as follows:

- For noise, since Runway 11/29 will be in use under No Project Alternative #2 and will be removed under the Project conditions, there will be a very slight shift in noise. This negligible shift is reflected in the data in Tables 8.5-1 and 8.5-2. In Table 8.5-1, CNEL values would be the same at all reference grid point locations except #17 where the change is 0.1 dB, which is imperceptible. Similarly, Table 8.5-2 shows that the difference in total acreage within the 65-dB CNEL contour between the Project and No Project Alternative #2 would be only 12 acres, a change of one half of one percent. [Note: The noise impacts of No Project Alternatives #1 and #2 are identical.]

- For criteria air pollutants and GHGs, the efficiencies associated with the new and expanded facilities of the Project will result in a reduction of those emissions, as compared to No Project Alternative #2. For example, emissions from aircraft during the taxiing phases of flights will be lower under the Project because the proposed airfield improvements will reduce delay.

Both No Project Alternative #2 and the Project include improvements to the airfield that will directly impact the burrowing owl and its habitat. As described in Section 4.5, the Project would result in the permanent loss of 32.4 acres of occupied burrowing owl nesting habitat and the degradation of 83.4 acres of nesting and roosting habitat at the airfield. While the acreage that would be impacted under No Project Alternative #2 has not been quantified, it is expected to be similar to that of the Project because the airfield improvements listed in Table 3.3-1 will be constructed. It should also be noted that, based on updated data/changed circumstances regarding the Airport's population of burrowing owls, the mitigation for impacts to the burrowing owl that is described in the existing Burrowing Owl Management Plan would need to be enhanced.

Both No Project Alternative #2 and the Project include the construction of capital improvements at the Airport and, therefore, the construction-related impacts would be similar.

No Project Alternative #2 would meet the project objectives but to a lesser extent than the Project. While No Project Alternative #2 includes many capital improvements that would serve to accommodate current and future demand for commercial aviation services at the Airport for a horizon year of 2027, it does not include the refinements and modifications to those improvements that are included in the proposed Project, such refinements that take into account the latest forecasts through 2037. Stated another way, the differences between No Project Alternative #2 and the Project are specifically tailored to address the latest forecasts and trends in air transportation. Additionally, while No Project Alternative #2 includes various improvements to the airfield to enhance efficiency, those improvements do not reflect the recommendations of the RIM Study. The primary objective of the RIM Study was to enhance safety by reducing the potential for runway incursions to occur; see Section 3.3.1 for further discussion.

AREAS OF PUBLIC CONTROVERSY

The City held a public scoping meeting on January 14, 2019 to discuss the Project and solicit public input as to the scope and contents of this EIR. At that meeting, as well as in several written comments received by the City in response to the EIR Notice of Preparation, noise-related concerns were raised by the City of Palo Alto, as well as a number of residents that live in northwest Santa Clara County within the cities of Sunnyvale, Cupertino, Mountain View, and Palo Alto.[6] The specific concern was whether the proposed Project would result in significant noise impacts to those communities in light of recent flight track modifications associated with the FAA's NextGen program and in light of aircraft overflights associated with other Bay Area airports. As discussed in Section 4.13, *Noise*, the Project would not result in a significant noise impact in those communities. Key findings include the following:

- No changes to any existing flight tracks are proposed by the Project.
- No changes to the Airport's existing curfew program are proposed by the Project.
- No changes to the Airport's runways that could affect aircraft heights or flight tracks (e.g., relocation of landing and/or departure thresholds) are proposed by the Project.
- No changes to the current operation and utilization of the Airport's runways are proposed by, or would result from, the Project. This includes when "north flow" and "south flow" operations occur, as such decisions are dictated by meteorological conditions and are under FAA jurisdiction.
- Per FAA, State of California, ALUC, and City regulations and policies, areas that are currently exposed to elevated levels of aircraft noise due to flights to/from the Airport are limited to portions of San José and Santa Clara. All such locations are currently compatible with the Airport, in large part because the affected residences and schools have been retrofitted by the Airport's Acoustical Treatment Program. The projected noise environment under the Project in year 2037 will not change these facts.
- The Airport's noise impact footprint (defined by the 65-dB CNEL contour) under both existing and Project (2037) conditions does not extend to the cities of Sunnyvale, Cupertino, Mountain View, and Palo Alto.
- While aircraft overflights associated with the Airport are likely to be audible in various northwest Santa Clara County communities, they are too high (and therefore not loud enough) to result in significant noise impacts at those locations.
- The Project will not affect the noise impact boundary of other Bay Area airports.
- As described in this EIR, the number of aircraft operations at the Airport is projected to increase between 2018 and 2037. However, as explained at the beginning of this Summary and throughout the EIR, the City has no ability to regulate the number of those flights. The increase in flights is independent; it will occur with or without the proposed Project.

[6] Copies of written comments received by the City on the NOP are contained in Appendix B of this EIR.

1.0 INTRODUCTION

1.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The City of San José (City), as the Lead Agency, has prepared this Draft Environmental Impact Report (EIR) for a Major Amendment[7] to the Norman Y. Mineta San José International Airport Master Plan (Project) in compliance with the California Environmental Quality Act (CEQA) and the CEQA Guidelines. The proposed amendment to the Airport Master Plan would extend the horizon year and demand forecasts from 2027 to 2037, incorporate the set of airfield configuration changes recommended in the Runway Incursion Mitigation/Design Standards Analysis Study, and update the layout and sizing of various landside facilities to adequately serve the projected 2037 demand.

In conformance with the CEQA Guidelines (CEQA Statutes and Guidelines, Office of Planning and Research, 2018), the EIR provides objective information to the public and decision makers regarding the environmental consequences of the proposed project. The following sections of the CEQA Guidelines clarify the role of an EIR:

- **15121(a) Informational Document**. An EIR is an informational document which will inform public agency decision makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency.

- **15151 Standards for Adequacy of an EIR**. An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

It is not the intent of an EIR to recommend either approval or denial of a project.

[7] Section 25.02.300 of the San José Municipal Code defines a ***Major Amendment*** to the Airport Master Plan as one "which, if adopted, would alter or revise the development goals, policies, principles or objectives applicable to the airport, or would potentially increase the design capacity of airport facilities to accommodate the total projected numbers of passengers, or the projected numbers of aircraft operations for any segment of aircraft activity, upon which projections the plan is based." A ***Minor Amendment*** to the Airport Master Plan is defined as one "which, if adopted, would not, in any way, potentially increase the design capacity of airport facilities to accommodate the total projected numbers of passengers, or the projected numbers of aircraft operations for any segment of aircraft activity, upon which projections the plan is based, nor modify any noise impact boundaries beyond those noise impact boundaries projected in the environmental clearance for the plan, and would be consistent with the overall development goals and policies in such plan."

1.2 EIR PROCESS

1.2.1 Notice of Preparation and Scoping

In accordance with Sections 15063 and 15082 of the CEQA Guidelines, the City prepared a Notice of Preparation (NOP) for this EIR. The NOP was circulated to local, state, and federal agencies on December 20, 2018. The NOP comment period concluded on January 31, 2019. The NOP provided a general description of the proposed Project and identified possible environmental impacts that could result from implementation of the project. The City also held a public scoping meeting on January 14, 2019 to discuss the project and solicit public input as to the scope and contents of this EIR. The meeting was held at Mineta San José International Airport. Appendix A of this EIR includes the NOP and Appendix B contains the comments received on the NOP.

1.2.2 Draft EIR Public Review and Comment Period

Publication of this Draft EIR will mark the beginning of a 45-day public review and comment period. During this period, the Draft EIR will be available to local, state, and federal agencies and to interested organizations and individuals for review. Notice of this Draft EIR will be sent directly to every agency, person, and organization that commented on the NOP. Written comments concerning the environmental review contained in this Draft EIR during the 45-day public review period should be sent to:

David Keyon
City of San José - Planning Division
200 East Santa Clara Street
Tower, 3rd Floor
San José, CA 95113
david.keyon@sanjoseca.gov

1.3 FINAL EIR/RESPONSES TO COMMENTS

Following the conclusion of the 45-day public review period, the City will prepare a Final EIR in conformance with CEQA Guidelines Section 15132. The Final EIR will consist of:

- Revisions to the Draft EIR text, as necessary;
- List of individuals and agencies commenting on the Draft EIR;
- Responses to comments received on the Draft EIR, in accordance with CEQA Guidelines (Section 15088);
- Copies of letters received on the Draft EIR.

Section 15091(a) of the CEQA Guidelines stipulates that no public agency shall approve or carry out a project for which an EIR has been certified which identifies one or more significant environmental effects of the project unless the public agency makes one or more written findings. If the lead agency approves a project despite it resulting in significant adverse environmental impacts that cannot be

mitigated to a less than significant level, or reduced or avoided by adopting a feasible alternative, the agency must state the reasons for its action in writing. This Statement of Overriding Considerations must be included in the record of project approval.

1.3.1 Notice of Determination

If the Project is approved, the City will file a Notice of Determination (NOD), which will be available for public inspection and posted within 24 hours of receipt at the Santa Clara County Clerk's Office for 30 days. The filing of the NOD starts a 30-day statute of limitations on court challenges to the approval under CEQA (CEQA Guidelines Section 15094(g)).

2.0 PROJECT BACKGROUND

The purpose of this section is to provide the reader with the background and context for the proposed Project, such project that consists of a major amendment to the Airport Master Plan for the Norman Y. Mineta San José International Airport.

2.1 PROJECT LOCATION AND CHARACTERISTICS

The Norman Y. Mineta San José International Airport (Airport) is one of three primary airports that serves the nine-county San Francisco Bay Area of Northern California. The Airport is located on an approximately 1,000-acre site in Santa Clara County at the southerly end of San Francisco Bay, approximately two miles north of downtown San José. The Airport is generally bounded by U.S. 101 to the north, the Guadalupe River and State Route 87 to the east, Interstate 880 to the south, and Coleman Avenue and De la Cruz Boulevard to the west.

The Airport primarily serves Santa Clara, Alameda, Santa Cruz, Monterey, and San Benito counties, and is the primary airport serving the Silicon Valley. The Airport accommodated 14.3 million passengers in 2018, or 17 percent of the Bay Area passenger volume.

The Airport has two passenger terminals, Terminal A with 16 gates and Terminal B with 20 gates.[8] There are two 11,000 feet-long runways at the Airport, 12R/30L and 12L/30R. A third runway, 11/29 with a length of 4,600 feet, is presently used as a taxiway; when operated as a runway as recently as 2009, it was used by small general aviation aircraft. The Airport serves most major commercial airlines with statewide, national, and international destinations, as well as air cargo airlines. The Airport also serves 137 based general aviation aircraft, 36% of which are corporate jets.

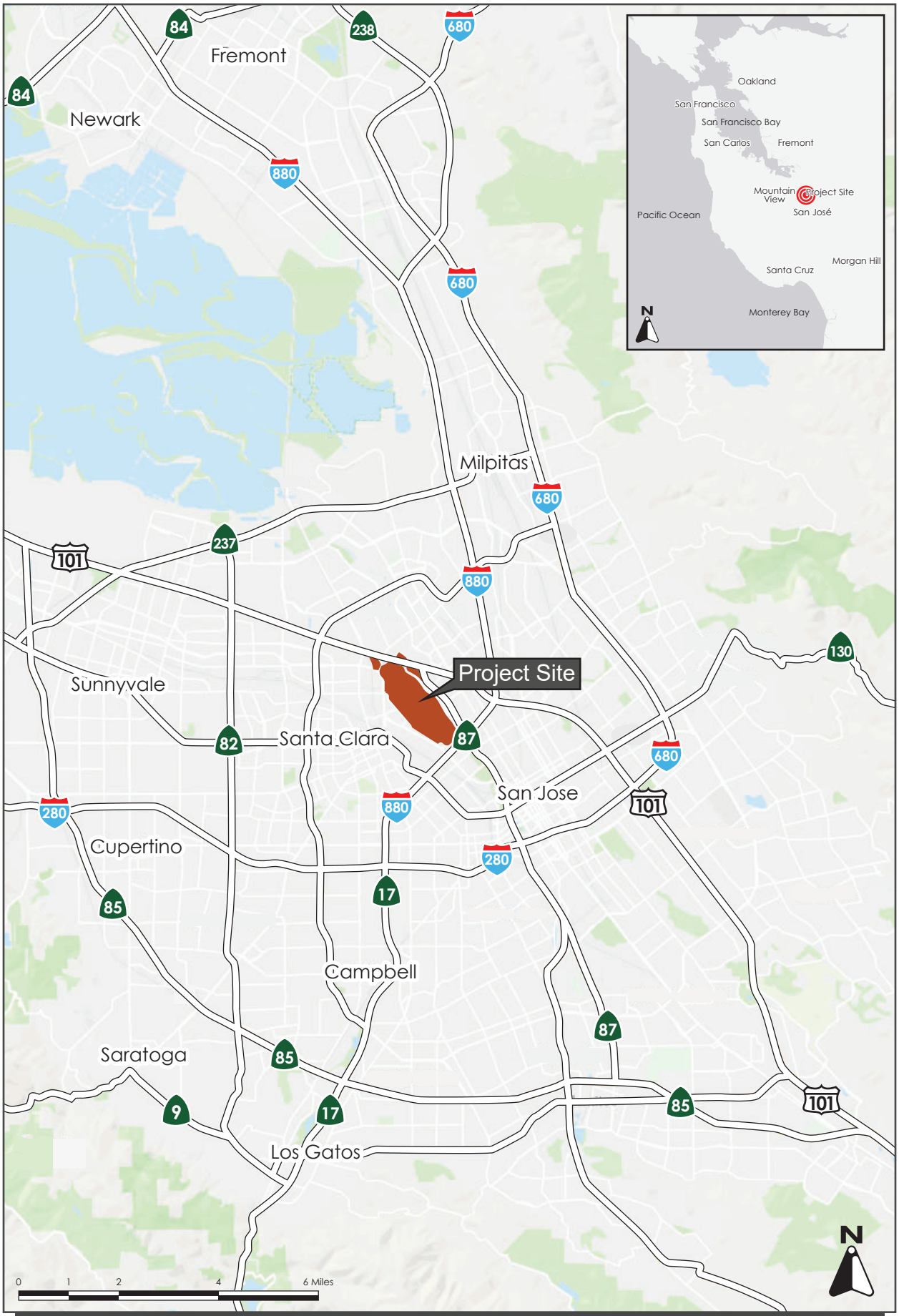
The vicinity of the Airport and the general San José area is predominantly urban in character. A highway and local street system surround the Airport site. The Airport vicinity includes industrial, commercial, and residential land uses, as well as certain special purpose noise sensitive uses, such as churches and schools. The Guadalupe River runs to the east of the airport. Regional, vicinity, and aerial maps showing the Airport are provided on Figures 2.1-1, 2.1-2, and 2.1-3, respectively.

2.2 BACKGROUND REGARDING THE AIRPORT MASTER PLAN

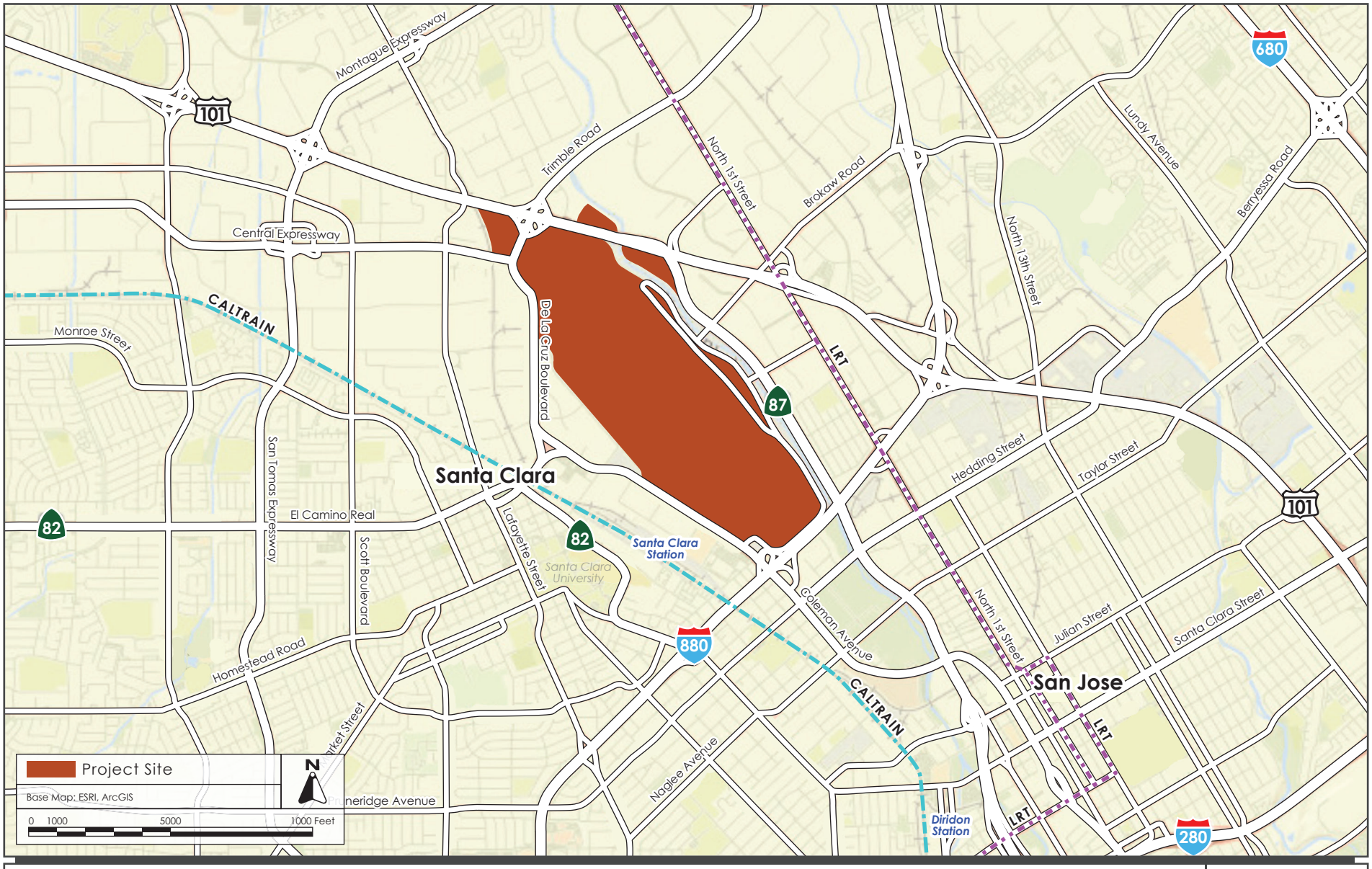
2.2.1 Development and Approval of the Airport Master Plan

In 1988, the City initiated a planning process to update its 1980 Master Plan for San José International Airport (Airport Master Plan). Aviation consultants prepared demand forecasts for the Airport and evaluated a series of alternative development scenarios which would adequately accommodate some or all of the projected growth in passenger and air cargo traffic at the Airport through a year 2010 planning horizon. Between 1988 and 1995, numerous meetings, workshops, and hearings occurred for the purpose of determining the range and scope of alternatives to be formally evaluated in an EIR.

[8] Eight of the 20 gates are interim facilities. These gates would be replaced with permanent facilities when the planned South Concourse of Terminal B is constructed.

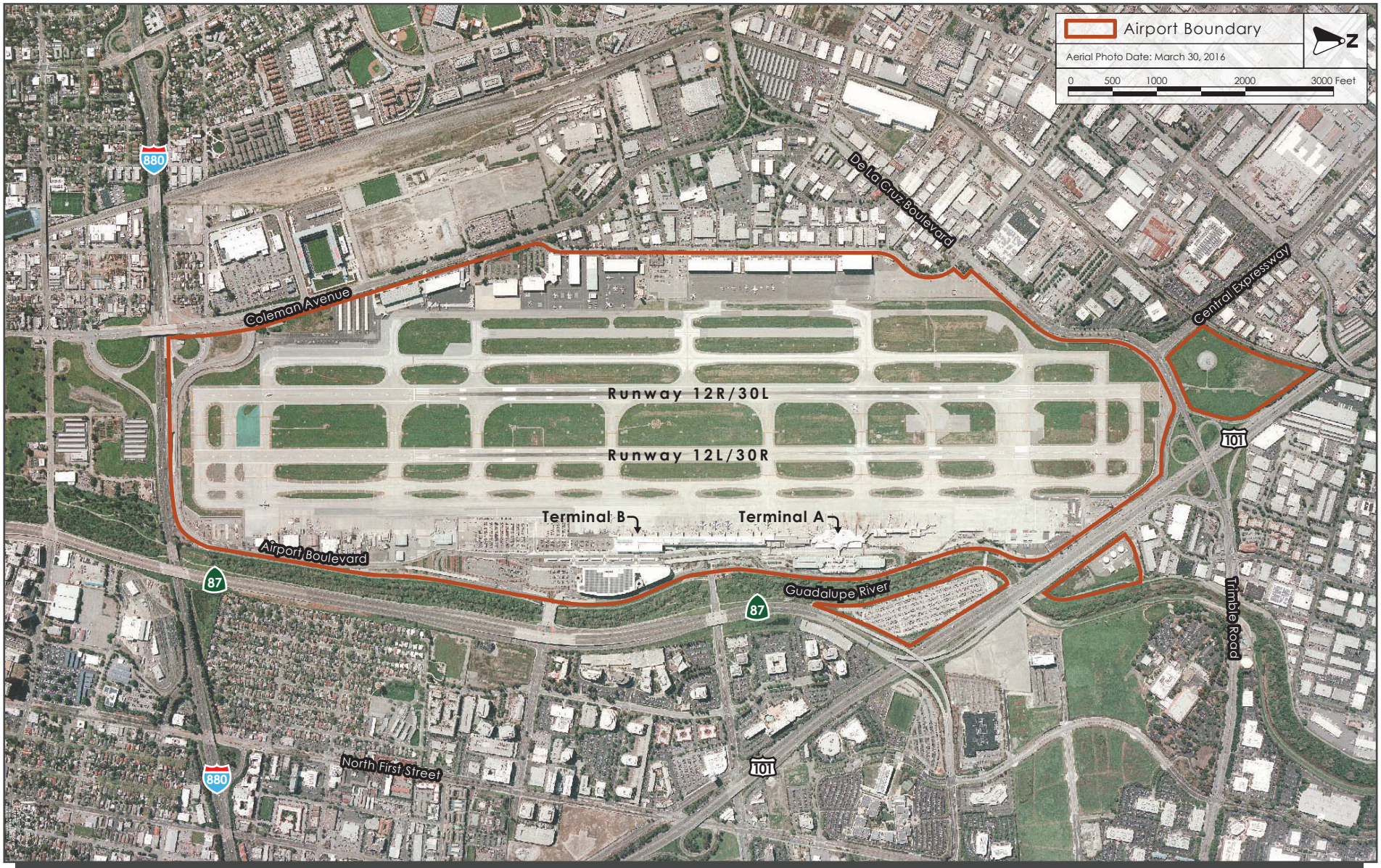


REGIONAL MAP | FIGURE 2.1-1



VICINITY MAP

FIGURE 2.1-2



AERIAL PHOTO OF AIRPORT

FIGURE 2.1-3

The City began the formal preparation of the Draft EIR for the update of the Airport Master Plan in 1995. The Draft EIR, which evaluated four alternatives (including the CEQA-mandated No Project Alternative), was published and circulated in October of 1996. The Final EIR was certified in June of 1997. The update to the Airport Master Plan was approved by the San José City Council on June 10, 1997.

A Supplemental EIR, which updated the noise analysis and addressed the effects of a proposed Automated People Mover (APM), was certified in 2003. A number of EIR Addenda have also been prepared, as listed in Table 2.2-1, to address changes to the environmental setting and/or various amendments to the Airport Master Plan that have been approved since 1997.

2.2.2 Approved Airport Master Plan

The approved Airport Master Plan consists of a comprehensive and integrated package of improvements to airside and landside facilities[9] at the Airport, such improved facilities having the design capacity to fully accommodate the forecast demand for air passenger, air cargo, and general aviation services in a comfortable and efficient manner. The 73 capital improvement projects identified in the Airport Master Plan include the reconstruction and lengthening of the Airport's two main runways, numerous taxiway improvements, new and reconstructed passenger terminals with up to 49 air carrier gates, new air cargo and general aviation facilities, several multi-story parking garages, and a new fuel storage facility. Table 2.2-2 summarizes the primary improvements contained in the approved Airport Master Plan and Table 2.2-3 lists all 73 projects that are in the approved Airport Master Plan, as amended, and their implementation status.

The 1997 Airport Master Plan EIR analyzed the environmental impacts of the Airport Master Plan based on aviation demand forecasts for a horizon year of 2010. As shown in Table 2.2-4, for air passengers and air cargo, the forecasted 2010 activity level was 17.6 million annual passengers with 243,100 annual airline operations[10] and 315,300 annual cargo tonnage with 13,300 annual cargo operations, respectively. For general aviation, the forecasted 2010 demand was for 630 based aircraft with 226,800 annual operations, but the Airport Master Plan accommodated (and the EIR analyzed) only 320 based aircraft with 115,300 annual operations.

As described in Section 2.3.1, the aviation demand forecasts were subsequently updated in 2005 to a horizon year of 2017 and again in 2009 to a horizon year of 2027.

[9] Facilities at airports are typically classified as "landside" or "airside." Airside facilities consist of the airfield and areas that are only accessible by passengers and employees. Landside facilities are accessible to the public.

[10] An aircraft "operation" is defined as a takeoff or landing. Therefore, if an aircraft flies into the Airport and subsequently takes offs, two operations have occurred.

Table 2.2-1: Approved Amendments to the 1997 Airport Master Plan [a]

Number	Description of Amendment	Type	Approval Date	CEQA Clearance
1	Interim off-Airport Office Space and Reuse of Vacated On-Airport Space for Air Carrier-related Uses	Minor	June 1998	Master Plan EIR Reuse
2	Expanded Fixed Base Operator (FBO) Leasehold for ACM Aviation	Minor	June 1999	Master Plan EIR Reuse
3	Interim Relocation of Federal Inspection Services (FIS) Facility	Minor	June 1999	Master Plan EIR Reuse
4	Interim Rental Car Ready/Return Facility Consolidation	Minor	April 2000	Master Plan EIR Reuse
5	Terminal Area Development Program Modifications (including terminal, parking garage, and roadway project revisions, as well as associated interim facility changes)	Minor	November 2001	Master Plan EIR Addendum #1
6	94th Aero Squadron Early Lease Termination/Removal and Interim Reuse for Runway Project Cement Plant	Minor	December 2001	Master Plan EIR Reuse
7	Relocation of Remote Transmitter/Receiver Facility to North Side of Control Tower & Reuse of Site for General Aviation	Minor	February 2002	Master Plan EIR Reuse
8	Automated People Mover (APM) between Airport and Metro/Airport LRT Station	Minor	March 2003	Master Plan Supplemental EIR
9	Additional General Aviation Facilities on west side of Airport & Designate Employee Parking as ultimate use in Terminal A Parking Garage	Major	April 2003	Master Plan EIR Addendum #2
10	Off-Airport Construction Staging & Change in Designated Location of Future Airline Maintenance/Equipment Storage Facilities	Minor	June 2003	Master Plan EIR Reuse
11	Lease of 52-acre off-Airport Site for the Temporary Relocation of Rental Cars & Employee Parking	Minor	November 2004	Master Plan EIR Addendum #4
12	Square Footage of Centralized Passenger Terminal increased to 1,700,000 square feet	Minor	March 2005	Master Plan EIR Addendum #4
13	Shifted the Master Plan Horizon Year from 2010 to 2017; Modified designs of Terminal Area Facilities; Modified range of interim uses on former-FMC Site	Major	June 2006	Master Plan EIR Addendum #6
14	Change in Eastside Non-Terminal Development Projects to provide flexibility in location, function, & development sequencing	Minor	May 2007	Master Plan EIR Reuse
15	Shifted the Master Plan Horizon Year from 2017 to 2027; Decrease size of air cargo/belly-freight facilities; Increase acreage for general aviation facilities; Modify Taxiways H & K	Major	June 2010	Master Plan EIR Addendum #8
16	Modified designation on former SJSU site to allow for the reconstruction of the Aircraft Rescue & Firefighting (ARFF) facility at that location	Minor	August 2018	Master Plan EIR Addendum #13

[a] "Minor" and "major" amendments to the Airport Master Plan are defined in the footnote on page 1.

Notes: EIR Addendum #3 addressed a modification to the Airport Noise Control Program that was approved on October 21, 2003. EIR Addendum #5 addressed the Airport's Gate Management Plan that was approved on November 15, 2005. EIR Addendum #7 addressed the impacts of the Master Plan regarding its potential to increase terrorist attacks. EIR Addendum #9 evaluated the greenhouse gas impacts of the Master Plan. EIR Addendum #10 addressed the impacts of a new FBO. EIR Addendum #11 addressed the impacts of six interim airline gates. EIR Addendum #12 addressed the impacts of a new general aviation hangar. No Master Plan Amendment was involved with any of these EIR Addenda.

Table 2.2-2: Summary of Key Projects in the Approved Airport Master Plan, as Amended [a]

Project Type	Description of Project
Airfield Improvements	- Reconstruct/lengthen Runway 12L/30R to 11,000 feet - Reconstruct/lengthen Runway 12R/30L to 11,000 feet
Passenger Terminals	- Modify existing terminals to create centralized passenger terminal with 49 air carrier gates and 1,700,000 ft^2 [b]
Public Parking Facilities	- Construct parking garages with 16,200 spaces [c]
Rental Car Facilities	- Construct consolidated parking garage with 6,000 spaces, including 2,000 ready/return spaces
Air Cargo Facilities	- Construct new all-cargo facilities totaling 1,165,100 ft^2 - Construct new belly-freight facilities totaling 92,400 ft^2
Aviation Support Facilities	- Construct new fuel storage facility with capacity of 4,000,000 gallons
General Aviation Facilities	- Provide general aviation facilities on a total of 100 acres on the west side of the Airport
Transportation and Access	- Upgrade/widen Terminal Drive - Construct grade separations on Airport Boulevard at Skyport Drive and Airport Boulevard - Construct APM between Airport and Metro/Airport LRT Station

Notes:

[a] See Table 2.2-3 for the complete list of all 73 projects included in the Airport Master Plan, including the implementation status of each.

[b] Number of air carrier gates limited to 40 by Section 25.04.300(B)(1) of the San José Municipal Code.

[c] Number of public parking spaces limited to 12,700 by Section 25.04.300(B)(3) of the San José Municipal Code.

Source: Airport Master Plan, as amended through August 2018.

Table 2.2-3: List of Projects in the Approved Airport Master Plan (as amended)		
#	**Description**	**Implementation Status**
Airfield Projects		
A-1	Reconstruct/extend **Runway 12L-30R** to 11,000 feet.	Complete
A-2	Extend parallel **Taxiway Y** from Taxiway L to new Taxiway N and from Taxiway B to new Taxiway A.	Complete
A-3	Extend/widen parallel **Taxiway Z** from Taxiway K to Taxiway L	Complete
A-4	Construct new cross **Taxiway A** at south end, east of extended Taxiway Y to west of extended Runway 12L-30R.	Complete
A-5	Construct new cross **Taxiway N** at north end, from extended Taxiway Y to west of extended Runway 12L-30R.	Complete
A-6	Strengthen cross **Taxiway C** east and west of Runway 12L-30R.	Complete
A-7	Extend cross **Taxiway D** west of Runway 12L-30R and strengthen east of 12L-30R.	Complete
A-8	Strengthen cross **Taxiway E** east of Runway 12L-30R.	Complete
A-9	Strengthen cross **Taxiway F** east and west of Runway 12L-30R	Complete
A-10	Strengthen cross **Taxiway H** east and west of Runway 12L-30R.	Complete
A-11	Strengthen cross **Taxiway J** east and west of extended Runway 12L-30R.	Complete
A-12	Strengthen cross **Taxiway K** east and west of extended Runway 12L-30R.	Complete
A-13	Strengthen cross **Taxiway L** from extended Taxiway Z to west of extended Runway 12L-30R.	Complete
A-14	Reconstruct/extend **Runway 12R-30L** to 11,000 feet.	Complete
A-15	Extend new cross **Taxiway A** west of extended Runway 12L-30R to Runway 12R-30L.	Complete
A-16	Extend new cross **Taxiway N** west of extended Runway 12L-30R to extended Runway 12R-30L.	Complete
A-17	Extend/widen parallel **Taxiway W** south from Taxiway C to Runway 12R-30L (for ADG-IV aircraft[a]).	Part Complete (Twy C→Twy B)
A-18	Strengthen cross **Taxiway C** west of Runway 12L-30R to west of Runway 12R-30L and widen at 12R-30L for higher-speed arrivals exit to east	Complete
A-19	Extend cross **Taxiway D** west of Runway 12L-30R to west of Runway 12R-30L and widen at 12R-30L for higher-speed arrivals exit to east.	Complete
A-20	Strengthen cross **Taxiway F** west of Runway 12L-30R to Runway 12R-30L.	Complete
A-21	Widen/strengthen cross **Taxiway G** west of Runway 12R-30L (for ADG-IV aircraft).	Complete
A-22	Strengthen cross **Taxiway H** west of Runway 12L-30R to Runway 12R-30L.	Complete
A-23	Strengthen cross **Taxiway J** west of extended Runway 12L-30R to west of Runway 12R-30L and widen at 12R-30L for higher-speed arrivals exit to west.	Part Complete (strengthening)
A-24	Strengthen cross **Taxiway K** west of extended Runway 12L-30R to Runway 12R-30L and widen at 12R-30L for higher-speed arrivals exit to east.	Complete
A-25	Strengthen cross **Taxiway L** west of extended Runway 12L-30R to Runway 12R-30L.	Complete
A-26	Widen/strengthen parallel **Taxiway V** from Taxiway G north to Taxiway W (for ADG-IV aircraft) and patch/restripe south of Taxiway G (for B-II aircraft).	Future

Table 2.2-3: List of Projects in the Approved Airport Master Plan (as amended)		
#	**Description**	**Implementation Status**
A-27	Extend cross **Taxiway H** between Runway 12R-30L and Taxiway V (for ADG-IV aircraft).	Future
A-28	Extend parallel **Taxiway Z** from Taxiway B to Taxiway A, and realign north of Taxiway G to match alignment south of Taxiway G.	Complete
A-29	Rehabilitate parallel **Taxiway Y** between Taxiway B and Taxiway L and strengthen at cross taxiways.	Complete
A-30	Construct parallel **Taxiway W** between Taxiway C and Taxiway L (for ADG-IV aircraft).	Complete
A-31	Strengthen cross **Taxiway C** from west of Runway 12R-30L to Taxiway W.	Complete
A-32	Extend cross **Taxiway D** west of Runway 12R-30L to Runway 11-29 (for ADG-IV aircraft east of Taxiway W and for Group III aircraft west of Taxiway W).	Complete
A-33	Widen/strengthen cross **Taxiway G** west of Runway 12R-30L to Taxiway V (for ADG-IV aircraft).	Complete
A-34	Widen/strengthen cross **Taxiway J** west of Runway 12R-30L to Taxiway V (for ADG-IV aircraft).	Complete
A-35	Rehabilitate terminal **apron pavement** east of Taxiway Z between Taxiway D & Taxiway G.	Complete
A-36	Rehabilitate **Taxiway C** between Taxiway V and Taxiway W, and Taxiway V between Taxiway C & Taxiway D.	Part Complete (C rehab)
A-37	Extend cross **Taxiway K** between Runway 12R-30L and Taxiway V (for ADG-IV aircraft).	Future
Terminal Projects		
T-1	Construct **interim long-term public and employee parking lot** (up to 7,400 spaces) on vacant 55-acre site on west side (north and south of Air Traffic Control Tower).	Complete (north of ATCT)
T-2	Remove **"Yellow" Long-Term Parking lot and "Green" Long-Term Parking lot**, temporarily consolidating long-term public and employee parking on west side (upon completion of Project T-1).	Complete
T-3	Relocate **"Red" Hourly Parking lot** and existing parking operations facilities to interim sites during construction of Project T-4).	Complete
T-4	Construct new public **short-term parking garage** (up to 3,000 spaces) on existing "Red" Hourly Parking lot site opposite new Terminal B.	Part Complete (350 spaces in rental car garage)
T-5	Construct new **"North Concourse" (part of new Terminal B)** between existing Terminals A & C, consisting of up to 400,000 ft^2 and 9 air carrier gates, with passenger processing facilities.	Complete
T-6	Remove former temporary **FIS facility** from ramp south of Terminal C and remove City office structures at 1311 Airport Blvd.	Part Complete (FIS removed)
T-7	Relocate/expand **employee parking** (up to 2,600 spaces) to terminal area parking facilities or to former FMC site on west side of Coleman Ave.	Complete (Terminal A Garage)
T-8	Construct new public **long-term parking garage** (up to approx. 9,000 spaces) on existing interim rental car ready/return parking lot site, including interim surface parking at site prior to garage construction, second 2-lane bridge accessing site from Airport Blvd. and, upon completion, removal of public parking from interim west side lot.	Part Complete (interim surface parking with 1st phase of garage underway)

Table 2.2-3: List of Projects in the Approved Airport Master Plan (as amended)		
#	**Description**	**Implementation Status**
T-9	Expand/remodel **Terminal A** by approx. 50,000 ft^2 (total of 400,000 ft^2) to provide additional passenger departure processing and concession space, retaining existing air carrier gates and Federal Inspection Services facility for international arrivals.	Complete
T-10	Install **temporary Terminal C passenger processing facility** (approx. 25,000 ft^2) on east side of existing south wing for interim relocation of terminal functions from existing north wing and baggage claim wing. Upon completion, demolish Terminal C north and baggage claim wings (displaced by Projects T-11 and T-15).	Complete
T-11	Expand **North Concourse/Terminal B** by up to 200,000 ft^2 and 4 air carrier gates to south on site of demolished north wing of Terminal C (upon completion of Project T-10).	Complete
T-12	Demolish remainder of **Terminal C** and temporary passenger processing facility (upon completion of Project T-11 and relocation of airline functions to Terminal A and North Concourse/Terminal B).	Complete
T-13	Expand **Terminal B (South Concourse)** to south onto remainder of demolished Terminal C site, consisting of up to 700,000 ft^2 and 10 air carrier gates (ultimate total of 40 gates and 1.70 million ft^2).	Future
T-14	Construct new **rental car parking garage facility** (up to 6,000 spaces, including 2,000 ready/return spaces and vehicle servicing facilities) opposite new Terminal B. Upon completion, remove existing interim rental car ready/return, servicing, and storage facilities.	Complete
T-15	Construct **terminal area roadway improvements** including realigned/ widened Terminal Dr., Airport Blvd./Terminal Dr. connection south of Terminal A, dedicated shuttle lane between Terminal A and new rental car parking garage opposite new Terminal B, reconfigured Terminal Dr./Airport Blvd. south intersection, and associated modifications.	Complete
Air Cargo Projects		
C-1	Construct interim expansion of east side **cargo airline area** ramp to the south (up to 162,000 ft^2 of new ramp).	Complete
C-2	Construct new **cargo airline facilities** at or adjacent to existing east side cargo airline areas, including up to 1.2 million ft^2 of ramp, building, and vehicle parking/movement space.	Future
C-3	Relocate **belly-freight facilities** to new site(s) on east side of Airport, including up to 93,000 ft^2 of ramp, building and vehicle parking/movement space.	Future
C-4	Remove existing **Air Freight Building** and vehicle parking/movement area (displaced by Project T-13 and T-15).	Future
General Aviation Projects		
G-1	Remove **south end tiedowns, shelters, and General Aviation Terminal** facilities (displaced by Projects A-1, A-2, A-4).	Complete
G-2	Remove **southeast t-hangar facilities** (displaced by Project A-28).	Complete
G-3	Remove **"94th Aero Squadron" restaurant** facility on west side and convert site to general aviation use.	Complete
G-4	Remove **east side ACM facilities** (FBO) upon lease expiration by 2009 (displaced by Project S-8).	Complete

Table 2.2-3: List of Projects in the Approved Airport Master Plan (as amended)		
#	**Description**	**Implementation Status**
G-5	Remove **San José State University facilities** at southwest side upon lease expiration in 2010 and convert site to aviation support or general aviation facility use.	Part Complete (removal of SJSU facilities)
G-6	Establish new **FBO leaseholds** on west side for reconfiguration of general aviation facilities.	Part Complete
G-7	Construct **general aviation facilities** on vacant parcel between San José Jet Center FBO leasehold and Air Traffic Control Tower.	Complete
G-8	Expand **general aviation facilities** onto northwest side of Airport (44 acres, upon implementation of Project T-7 and T-8).	Part Complete
Aviation Support Projects		
S-1	Construct approx. 7-acre **fuel storage facility** (up to 8 tanks, 4.0 million gallons capacity) on vacant parcel north of Hwy. 101, two-acre fuel dispensing facility between Terminal A and north end of airfield, and pipeline connecting storage and dispensing.	Part Complete (3 tanks, 2.0 million gal.)
S-2	Remove existing **fuel storage and dispensing facilities** on southeast side of Airport and clean-up site (upon completion of Project S-1).	Complete
S-3	Relocate/expand **airport maintenance facilities** at existing or new sites on east or west sides of Airport.	Future
S-4	Expand **flight kitchen facilities** at existing or new sites on east side of Airport or relocate/expand off-airport.	Future
S-5	Relocate/expand **airline maintenance/storage facilities** at various or new sites on east side of Airport.	Future
S-6	Remove, relocate, or upgrade existing **aviation support facilities** on southeast side of Airport (1239-1311 Airport Blvd.) to or at various existing or new eastside sites.	Future
S-7	Relocate/upgrade/expand **Aircraft Rescue & Fire Fighting (ARFF) facility** at new site on west side of Airport, potentially including a consolidated Airport Response Center facility.	Underway/estimated completion in 2020
S-8	Convert existing east side **ACM leasehold** to aviation support uses, such as airline provisioning/security clearance facility, roadway expansion, and aircraft remote parking.	Complete
S-9	Reuse **former FMC site** on west side of Coleman Ave. for interim or long-term uses to be determined over time to facilitate on-Airport development or operation, such as project construction staging, rental car storage, public or employee parking, support facilities, and compatible non-aviation leaseholds.	Complete (interim construction staging only)

[a] The Airplane Design Group (ADG) is a FAA-defined grouping of aircraft types which has six groups based on wingspan and tail height. ADGs range from I (small aircraft) to VI (largest aircraft such as Boeing 747 or Airbus A380). ADGs have a direct effect on the required minimum design standards for runways, taxiways, and aprons. These include criteria for pavement strength, width, and horizontal separation from parallel taxiways and runways.

Table 2.2-4: Comparison of Prior Forecasts and Activity Levels					
	Actual Activity Level		**Forecasted Activity Levels Used in Previous CEQA Analyses**		
Date of Forecast →			**1994**	**2005**	**2009**
Forecast Horizon Year →			**2010**	**2017**	**2027**
	Baseline Used in 1997 EIR (1993)	**Baseline Used in This EIR (2018)**	**Used in 1997 EIR**	**Used in 6th EIR Addendum**	**Used in 8th EIR Addendum**
Annual Air Passengers (millions)	7.0	14.3	17.6	17.6	17.6
Annual Air Cargo (tons)	81,237	60,182	315,300	207,600	189,700
General Aviation (based aircraft)	491	137	320	350	209
Annual Aircraft Operations					
Air Passenger	115,832	135,138	243,100	185,700	183,660
Air Cargo	5,044	1,590	13,300	6,200	6,830
General Aviation	176,581	36,418	115,300	126,000	73,200
Military	888	243	800	500	100
Total	298,345	173,389	372,500	318,400	263,790

Sources:
- 1997 Airport Master Plan EIR
- 1997 Airport Master Plan EIR Addenda #6, #8, and #10
- Summary of Aviation Demand Forecasts (Ricondo & Associates, 2009)
- Annual Status Report on the Airport Master Plan for 2017

2.3 IMPLEMENTATION OF THE AIRPORT MASTER PLAN FROM 1997 – 2018

Subsequent to the certification of the EIR and approval of the Airport Master Plan in 1997, many of the capital improvement projects have been constructed, as shown in Table 2.2-3. This includes the majority of the airfield improvement projects such as the extension of the Airport's two main runways to 11,000 feet each and associated taxiway improvements. On the east side of the Airport are new and remodeled passenger terminals, a customs facility for international flights, new/expanded parking lots and garages, and a new consolidated rental car facility. A new fuel storage facility has been constructed, as have numerous upgrades to the Airport's roadway system. On the west side of the Airport, new general aviation facilities have been constructed that include over 300,000 ft^2 of aircraft hangars and associated support facilities.

The remaining Airport Master Plan capital projects include several taxiway upgrades/extensions, new air cargo facilities on the east side of the Airport, construction of the South Concourse of Terminal B, upgrades and expansion of various support facilities (e.g., maintenance, flight kitchen, etc.), and the buildout of general aviation facilities on the west side of the Airport. These projects are discussed in greater detail in Section 3.3 of this EIR.

2.3.1 Previous Updates to Forecasts and Airport Master Plan Amendments

2.3.1.1 *Introduction and Background*

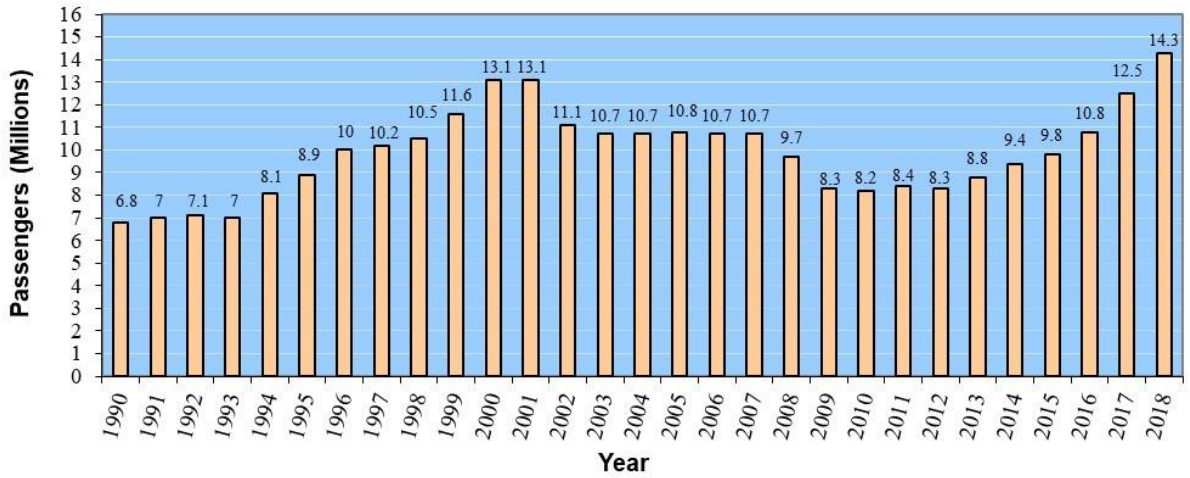
Like most master plans that contain numerous individual projects that are implemented over a multi-year period, the City has approved a number of Airport Master Plan amendments to reflect changed conditions in the aviation industry. The following paragraphs summarize the changed conditions and the factors that led to them.

At the time the original demand forecasts were undertaken in 1994, the Airport was experiencing increases in annual air passenger activity levels. Those increases, which are summarized in Figure 2.3-1, were projected to continue through the year 2010. However, several unforeseen events subsequently transpired, which resulted in a major effect on the aviation industry and on activity levels at the Airport: 1) terrorist attacks on September 11, 2001; 2) bursting of the high-tech "dot com" bubble in Silicon Valley; 3) substantial increases in the price of aviation fuel; and 4) the widespread economic recession that began in 2008.

Because of these events and other factors, the airline industry undergoes rapid and significant changes. For example, airlines are frequently modifying their route structure and the markets they serve in response to changes in economic and competitive conditions. In addition, airline start-ups, mergers, reorganizations, and bankruptcies are more common in today's aviation industry than in past years.

At the Airport, the cumulative effect of all these changes was a decrease in airport activity between 2000 and 2012. However, beginning in 2013 and continuing to the present, this trend has reversed as the economy recovers. Based on data compiled by the Airport, Figure 2.3-1 depicts these changes.

Figure 2.3-1:
Comparison of Annual Air Passenger Activity Levels at SJC



Such changes have necessitated updates to the Airport's aviation forecasts, which in turn has resulted in various changes to the size, function, and location of some of the Airport's planned air passenger, air cargo, and general aviation facilities.

2.3.1.2 *1994 Forecasts*

The original Airport Master Plan horizon year of 2010 was based on aviation demand forecasts that were prepared in 1994. The forecasts, which were approved by the FAA and utilized throughout the 1997 Master Plan EIR, quantified the expected demand for air transportation services at the Airport in 2010, based upon an analysis of economic, employment, and demographic data. Based on those forecasts, which are summarized in Table 2.2.4, a list of airport facility improvement projects to accommodate the projected demand was developed. These projects became the Airport Master Plan that was approved by the San José City Council in 1997.

2.3.1.3 *2003 Forecast Update and Master Plan Amendment*

In 2003, the 1994 assumptions for aircraft fleet mix and aircraft operations projected to occur by 2010 were revised to reflect the latest practices of the airlines, air cargo carriers, and the owners-operators of general aviation aircraft. Also, in 2003, the number of based general aviation aircraft at the Airport was raised from 320 to 360 to reflect a Master Plan Amendment that allowed the expansion of Atlantic Aviation (formerly the San José Jet Center), an existing fixed base operator (FBO)[11] at the Airport. The Atlantic Aviation expansion project was evaluated in the Second EIR Addendum (2003).

2.3.1.4 *2005 Forecast Update and 2006 Master Plan Amendment*

As part of a 2005 financial feasibility analysis, the level of air passenger activity at the Airport that was originally projected to be reached by year 2010, was projected not to be reached until year 2017. This updated forecast, which is summarized in Table 2.2.4, formed the basis for a decision in 2006 by the City to shift the horizon year for the Airport Master Plan from 2010 to 2017. The shift in horizon year from 2010 to 2017 was evaluated in the Sixth EIR Addendum (2006).

2.3.1.5 *2009 Forecasts and 2010 Master Plan Amendment*

In 2009, the City completed another update to the aviation demand forecasts for the Airport. As shown in Table 2.2-4, the major findings of the 2009 updated forecast were as follows:

- The level of air passenger activity at the Airport that was originally projected to be reached by year 2010 (i.e., 17.6 million annual passengers), and subsequently projected to be reached by 2017, was projected not to be reached until year 2027.

- For air cargo, the 2009 updated forecast showed a much slower growth rate in future demand than previously projected. As shown in Table 2.2-4, the projected annual air cargo volume for year 2027 was 189,700 tons. This demand level is 40% less than the 315,300 tons that had been previously projected to occur by year 2010 and subsequently by 2017.

- For general aviation, the 2009 updated forecast showed a much lower growth rate in future demand than previously projected. As shown in Table 2.2-4, the projected demand for year 2027 was 209 based aircraft. This demand level is 42% less than the accommodated demand of 360 based aircraft that had been previously projected for year 2010 and subsequently 2017. In addition, the general aviation environment has changed, and is projected to continue to

[11] A **fixed base operator (FBO)** is a business located at an airport that provides aviation-related services. Examples include aircraft rentals, fueling, storage, maintenance, and repairs, as well as flight training schools.

change, from a fleet comprised largely of single-engine piston aircraft to a fleet comprised largely of corporate jet aircraft. As an example, as shown in Table 2.3-1, the 1994 forecasts projected that 9% of all based aircraft in 2010 would be corporate jets, whereas the 2009 forecasts project that 67% of all based aircraft in 2027 will be corporate jets. Actual data, as shown in Table 2.3-1, comparing general aviation aircraft based at the Airport in 1994 and 2018, confirms the projection and shows that there are fewer piston aircraft and more jets over time. This projected trend is expected to continue based on industry-wide changes in general aviation.

Table 2.3-1: Composition of Based General Aviation Aircraft Fleet Mix

	Projected		Actual	
Aircraft Category	**1994 Forecast for Horizon Year 2010**	**2009 Forecast for Horizon Year 2027**	**1994**	**2018**
Single-Engine Piston	67 %	23 %	73 %	47 %
Multi-Engine Piston	15 %	3 %	15 %	7 %
Turboprop	5 %	5 %	3 %	7 %
Turbojet	9 %	67 %	7 %	36 %
Helicopter	4 %	2 %	2 %	3 %
Total	100 %	100 %	100 %	100 %

Sources:

- San José International Airport Master Plan Update Final Report, 1999.
- Summary of Aviation Demand Forecasts for SJC, Ricondo & Associates, 2009.
- City of San José Airport Department (source for 2018 data)

These changes led the City to amend the Airport Master Plan in 2010 to 1) shift the horizon year from 2017 to 2027, 2) relocate and decrease the size of planned air cargo facilities, 3) relocate and increase the size of planned general aviation facilities to accommodate the demand for more corporate jets, and 4) modify two taxiways to accommodate the expanded general aviation facilities. These changes were evaluated in the Eighth EIR Addendum (2010). Portions of the planned general aviation facilities contemplated under the 2010 amendment were constructed in 2015.

3.0 PROJECT DESCRIPTION

City of San José's Role in Regulating Activity Levels at the Airport

The City of San José is the owner and operator of the Airport. However, the Federal Airline Deregulation Act of 1978 prohibits a state or local government's regulation of an air carrier's rates, routes, or services. The City cannot regulate the number of flights or the types of aircraft utilizing the Airport, as long as those flights and aircraft can be reasonably accommodated. In practical terms, this means that the level of activity at the Airport will be directly related to two primary factors: 1) the demand for air transportation services that is largely based on the regional economy and population, and 2) whether there are facilities at the Airport that can accommodate the demand. As an example, if an airline determines that there is a market for adding flights to a given destination from San José and the existing facilities (i.e., runways, taxiways, gates, etc.) can accommodate the desired aircraft, the City has no approval authority over the airline's decision to add the flights.

Unlike its ability to directly control activity levels (e.g., population, employees, traffic, noise, etc.) associated with most land use decisions, the City can only indirectly control activity at the Airport by limiting the size and type of facilities. In other words, the City is not deciding whether to increase the annual passenger level from 14.3 million to 22.5 million or air cargo tonnage from 60,000 to 100,000 tons annually; those are outside the City's direct control. Rather, the City in developing the Airport Master Plan, is deciding how to accommodate the increased air passenger, air cargo, and general aviation demand by making improvements to the Airport.

This EIR evaluates the direct and reasonably foreseeable indirect environmental changes that would result from both the forecast increases in air passenger, air cargo, and general aviation activity (not decisions to be made by the City) along with the physical changes proposed to the Airport to accommodate the increased activity (decisions to be made by the City). However, for the reasons explained in Section 8, Alternatives, the 2037 forecasted increase in air passengers, air cargo, and general aviation can be accommodated by the existing facilities at the Airport or would be accommodated by the remaining improvements under the existing Airport Master Plan.

To summarize, the EIR provides objective information about the environmental conditions that would exist under three scenarios, should the 2037 forecasted growth be realized:

- No New Facilities at the Airport (No Project Alternative #1 evaluated in Section 8)
- Construct Remaining Improvements in the existing Airport Master Plan (No Project Alternative #2 evaluated in Section 8)
- Construct Improvements in proposed Major Amendment to the Airport Master Plan (the Project)

The public and the decision-makers can take the environmental considerations of those three scenarios into account. The City can decide to leave the Airport as it currently is, continue to implement the remaining improvements contained in the existing Airport Master Plan, or implement the improvements contained in the proposed amendment to the Airport Master Plan, all while air passenger, air cargo, and general aviation activity levels increase as forecast to 2037.

The proposed Project consists of a major amendment[12] to the approved Norman Y. Mineta San José International Airport Master Plan. The proposed amendment would modify the Airport Master Plan in several primary categories:

- Modify certain components of the airfield to reduce the potential for runway incursions
- Update the aviation demand forecasts and shift the horizon year from 2027 to 2037
- Modify future facilities requirements at the Airport to reflect updated demand forecasts

The proposed modifications in each of the primary categories are described below.

3.1 AIRFIELD MODIFICATIONS

The project proposes to modify certain components of the airfield to reduce the potential for runway incursions and to improve compliance with current FAA design standards. These proposed modifications to the airfield are described below in Section 3.3.1. The following paragraphs provide the background on the subject of runway incursions and the purpose of the proposed changes to the airfield.

A "runway incursion" is defined as the unauthorized presence of an aircraft, vehicle or person on a surface designated for the landing and take-off of aircraft. Runway incursions are a significant safety concern, the most serious of which have led to collisions, injuries, and fatalities. To reduce this hazard, the FAA has developed a grant-funded program for a Runway Incursion Mitigation/Design Standards Analysis Study (typically referred to as the "RIM Study") at various airports. The purpose of a RIM Study is to identify issues at an airport that could contribute to a runway incursion. According to the FAA, "airfield geometry has been identified as a primary contributing factor for runway incursions. After analyzing more than six years of national runway incursion data between 2007 and 2013, [FAA] developed a preliminary inventory of locations (initial version released in July 2015) at airports where risk factors might contribute to a runway incursion. To address these existing issues, [FAA] has initiated a new comprehensive multi-year Runway Incursion Management program to identify, prioritize, and develop strategies to help airport sponsors mitigate risk at these locations."[13]

According to the FAA, San José International is one of many in the United States where runway incursions have occurred.[14] This led to the initiation of a RIM Study at the Airport in 2016. The purpose of the RIM Study was to reduce the risk of runway incursions and to conform with current FAA airfield design standards and criteria to ensure a high level of airfield safety.

In June 2018, the RIM Study's technical analysis concluded with selection of a recommended airfield reconfiguration alternative that is part of the proposed amendment to the Airport Master Plan. These proposed modifications to the airfield are described below in Section 3.3.1.

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[12] For the definition of a "major" amendment to the Airport Master Plan, please see footnote 1 on page 1.
[13] https://www.faa.gov/airports/special_programs/rim/, accessed 8/24/2018.
[14] https://www.faa.gov/news/updates/?newsId=83768

3.2 2017 FORECASTS AND SHIFT OF THE AIRPORT MASTER PLAN HORIZON YEAR TO 2037

As described previously in Sections 2.2 and 2.3, the City updates the demand forecasts for the Airport from time-to-time to account for the latest changes in the aviation industry and in the economy. The updates provide critical information to the Airport regarding planning for the types and sizes of facilities needed to accommodate the demand at a reasonable level of service. Consistent with this planning principle, previous forecasts were completed in 1994, 2005, and 2009, each of which affected the type, size, and timing of many of the projects contained in the Airport Master Plan.

The latest update to the aviation demand forecasts for the Airport was completed in 2017 as part of the above-described RIM Study. Specifically, in order to adequately assess existing and future conditions on the airfield, the RIM Study necessitated the update to the forecasts to year 2037 to achieve a standard 20-year planning horizon. This is the reason for the proposed shift in the Airport Master Plan horizon year from 2027 to 2037.

The 2017 aviation demand forecasts address each segment of aviation activity: air passengers, air cargo, and general aviation.[15] The methodology used to develop the forecasts takes numerous factors into consideration, including historical activity levels, the existing and projected demographic and economic characteristics of the area, airfares, existing and likely domestic and international destinations, and the Airport's role as one of three major airports serving the San Francisco Bay Area.[16] For a detailed discussion of the methodology used in developing the demand forecasts, please refer to Appendix C.

The 2017 aviation demand forecasts for the Airport for year 2037 were approved by the FAA for use in the RIM Study and are summarized in Table 3.2-1. The table includes comparisons to both previous forecasts and existing activity levels. Highlights of the 2017 forecasts are as follows:

- The level of air passenger activity at the Airport is projected to continue to rise, reaching 22.5 million annual passengers by year 2037, a 57% increase over 2018. However, air passenger aircraft operations will increase by a lesser amount (36%), reflecting the trend toward the use of larger aircraft.

- Air cargo tonnage is projected to increase at an annual compounded growth rate of 2.4%.

The number of based general aviation aircraft is projected to increase at an annual compounded growth rate of 0.9%. Consistent with the projected national trend, jet aircraft are expected to account for an increasingly larger percentage of based aircraft at the Airport (Table 3.2-2).

[15] Kimley Horn Associates, RIM Study Technical Memorandum: Summary of Updated Aviation Activity Forecasts, June 2017.

[16] Due to the substantial uncertainties regarding the funding and timing for the construction of high speed rail (HSR) in California, the forecasts do not account for any reduction in the number of air passengers that might occur due to HSR. If HSR were to be constructed between San Jose and Los Angeles as ultimately envisioned, there would likely be a reduction in demand, and therefore fewer flights, serving that route. To that extent, the forecasts are conservative.

Table 3.2-1: Existing and Forecasted Activity Levels at the Airport

	Actual 2018	Previous Forecasts			Current Forecast
Date of Forecast →		**1994**	**2005**	**2009**	**2017**
Forecast Horizon Year →		**2010**	**2017**	**2027**	**2037**
Annual Air Passengers (millions)	14.3	17.6	17.6	17.6	22.5
Annual Air Cargo (tons)	60,182	315,300	207,600	189,700	100,200
General Aviation (based aircraft)	137	320	350	209	164
Annual Aircraft Operations					
Air Passenger	135,138	243,100	185,700	183,660	183,920
Air Cargo	1,590	13,300	6,200	6,830	1,960
General Aviation	36,418	115,300	126,000	73,200	51,580
Military	243	800	500	100	250
Total	173,389	372,500	318,400	263,790	237,710

Sources:

- 1997 Airport Master Plan EIR
- 1997 Airport Master Plan EIR Addenda #6, #8, and #10
- Summary of Aviation Demand Forecasts (Ricondo & Associates, 2009)
- Annual Status Report on the Airport Master Plan for 2018
- Summary of Aviation Demand Forecasts (Kimley Horn Associates, 2017)

Table 3.2-2: Existing and Forecasted General Aviation Based Aircraft Fleet Mix

	Single-Engine Piston	Multi-Engine Piston	Turboprop	Turbojet	Helicopter	Total
2018 (Actual)	47 %	7 %	7 %	36 %	3 %	100 %
2037 (Projected)	31 %	5 %	7 %	52 %	5 %	100 %

Sources:

- City of San José Airport Department (source for 2018 data)
- Summary of Aviation Demand Forecasts (Kimley Horn Associates, 2017)

Table 3.2-3: Existing and Projected Aircraft Fleet Mix and Operations				
	2018 Existing Operations		2037 Projected Operations	
Aircraft Type	Annual	Avg. Daily	Annual	Avg. Daily
Commercial Airline				
Airbus 319, 319 Neo	4,999	13.7	3,990	10.9
Airbus 320-100/200, 320 Neo	8,444	23.1	4,650	12.7
Airbus 321, 321 Neo	600	1.6	11,290	30.9
Airbus 330-200	296	0.3	1,540	4.2
Airbus 350-900	0	0.5	1,550	4.2
Boeing 717	2,153	5.9	0	0.0
Boeing 737-400/500	139	0.4	0	0.0
Boeing 737-700/700LR, 737-7 Max	49,246	134.9	36,880	101.0
Boeing 737-800, 737-8 Max	21,372	58.6	64,980	178.0
Boeing 737-900/900ER, 737-9-10 Max	7,844	21.5	23,900	65.5
Boeing 757-200/300	225	0.6	8	0.0
Boeing 767-300/300ER (cargo)	2,151	5.9	1,440	3.9
Boeing 777-200/200ER/300ER, 777-8-9	11	0.0	770	2.1
Boeing 787-8-9-10	1,751	4.8	2,190	6.0
Airbus 220, Bombardier CS100	0	0.0	14,210	38.9
CRJ-200/700/900/1000	3,567	9.8	30	0.1
Bombardier Dash 8	1,774	4.9	250	0.7
McDonnell Douglas DC-8/10	55	0.2	0	0.0
Embraer 175/190/195	30,403	83.3	17,750	48.6
MD-80/90	400	1.1	0	0.0
Other	798	2.2	452	1.2
General Aviation				
Beechcraft Bonanza 33/35/36	282	0.8	1,150	3.2
Beechcraft 55/58 Baron	1,130	3.1	600	1.6
Beechcraft King Air 90/200/300/350	553	1.5	1,260	3.5
Beechcraft Beechjet 400	198	0.5	350	1.0
Bombardier Challenger 300/350	3,462	9.5	4,000	11.0
Bombardier Global 500/Global Express	1,541	4.2	2,620	7.2
Canadair Bombardier CL600/610	1,212	3.3	800	2.2
Cessna 172/182/206/210	2,314	6.3	2,070	5.7
Cessna Citation 510/550/560/560XL	3,464	9.5	5,160	14.1
Cessna Citation 680/750	2,988	8.2	5,600	15.3
Cessna Citation CJ1/2/3	440	1.2	800	2.2
Cirrus SR22	5,173	14.2	1,400	3.8
Dassault Falcon 7X/50/900/2000	3,000	8.2	4,190	11.5
Embraer EMB/ERJ-145, Phenom 100/300	2,647	7.3	5,900	16.2
Gulfstream IV/V/VI	4,322	11.8	5,560	15.2
Gulfstream G150/200/280	900	2.5	1,030	2.8
Learjet 35/45/60	878	2.4	1,100	3.0
Pilatus PC12	492	1.3	1,340	3.7
Piper Cherokee/Malibu/Saratoga	124	0.3	520	1.4
Raytheon Hawker 800	478	1.3	580	1.6
Other – Single & Multi-Engine Piston	8,454	23.2	2,430	6.7
Other - Turboprop	8,515	23.3	670	1.8
Other - Jet	4,905	13.4	1,930	5.3
Other - Helicopter	1,680	4.6	520	1.4
Military	247	0.7	250	0.7
Totals:	**195,627**	**536.0**	**237,710**	**651.3**

Sources: Kimley Horn Associates (2017) and City of San José (2019).

As part of developing updated demand forecasts, the number of aircraft operations associated with each sector of the demand was calculated. For air passengers, aircraft types and frequencies were matched to seat departure projections for each market based on historical service patterns, current dominant carriers, aircraft currently in use, aircraft on order, length of flight, and announced plans of current and new entrant airlines. For air cargo, operations were derived from the tonnage projections, historical load factors (tons/operation), and the anticipated cargo airline fleets. For general aviation, operations were projected from local data and from FAA national level forecasts of hours flown for each aircraft type.

Table 3.2-3 provides the projected 2037 aircraft fleet mix for the Airport, including the number of projected operations. For comparison, the 2037 data are compared to existing (2018) conditions.

Completion of the revised forecasts was followed by a review of the yet-to-be-constructed projects in the Airport Master Plan. The purpose of the review was to determine if changes (i.e., modifications, deletions, additions) to the projects were needed so that the Airport will be able to accommodate the revised forecast demand in a comfortable and efficient manner. Please see the following section for a list of those proposed changes.

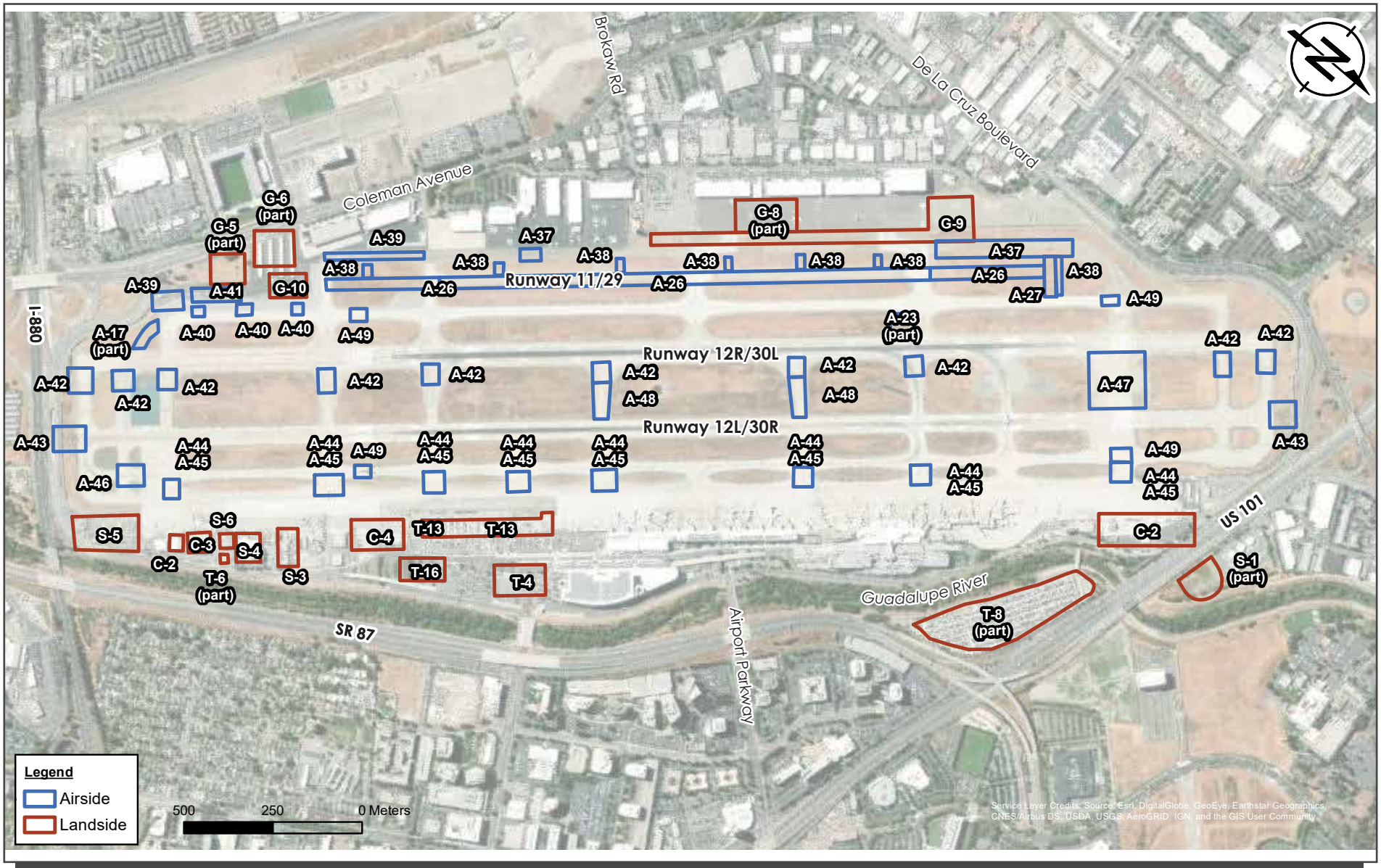
3.3 PROPOSED MODIFICATIONS TO AIRPORT MASTER PLAN PROJECTS

Table 3.3-1 lists the remaining to-be-constructed Airport Master Plan projects and their anticipated phasing, including those projects that are proposed to be modified. Also included in Table 3.3-1 are a number of proposed new projects. Figure 3.3-1 depicts the location of each project. For ease of comparison, Table 3.3-2 summarizes the key facilities at the Airport under three scenarios:

- Existing/2018 Conditions
- 2037 Conditions Assuming Buildout of the Existing Airport Master Plan (No Project)
- 2037 Conditions Assuming Buildout of the Modified Airport Master Plan (Project)

3.3.1 Airfield Projects

All of the proposed airfield projects that are listed in Table 3.3-1 are outcomes of the recently-concluded RIM Study. As described in Section 3.1, the objective of the RIM Study was to reduce the risk of runway incursions and to conform with current FAA airfield design standards and criteria to ensure a high level of airfield safety. The RIM study recommended some reconfiguration of the airfield to achieve this objective. Specifically, the proposed projects will construct, realign and improve various taxiways, modify aprons, modify aircraft hold positions, modify blast pads, and construct taxiway connectors. Runway 11/29, which has been closed since 2009 and used as a temporary taxiway, will be permanently converted to a taxiway. Other proposed improvements include new pavement markings and the re-naming of taxiways to reduce potential pilot confusion.



LOCATIONS OF FUTURE AIRPORT MASTER PLAN PROJECTS

FIGURE 3.3-1

Table 3.3-1: To-Be-Completed Projects in the Airport Master Plan					
			Preliminary Phasing		
Num-ber	Description Under 1997 Existing Airport Master Plan (as previously amended)	Description Under Proposed Amendment to Airport Master Plan	Phase 1 (2019-2027)	Phase 2 (2028-2037)	Notes, Including Estimated Construction Start Date
Airfield Projects					
A-17	Extend/widen parallel **Taxiway W** south from Taxiway C to Runway 12R-30L (for ADG-IV aircraft).	Portion of project between Taxiways B & C already completed. Revised description for remaining portion of A-17 is as follows: Extend parallel **Taxiway W** south from Taxiway B to Runway 12R-30L (for ADG-III aircraft).	**X**		2021
A-23	Strengthen cross **Taxiway J** west of extended Runway 12L-30R to west of Runway 12R-30L and widen at 12R-30L for higher-speed arrivals exit to west.	**Taxiway J** strengthening already completed. Remaining phase of A-23 to be completed as described in the existing Airport Master Plan.	**X**		Minor Construction
A-26	Widen/strengthen parallel **Taxiway V** from Taxiway G north to Taxiway W (for ADG-IV aircraft) and patch/restripe south of Taxiway G (for B-II aircraft).	Replace with Following New Project: Convert former **Runway 11-29** to a new parallel Taxiway V (for ADG-III aircraft) and extend south to Taxiway C and north to a new cross Taxiway V7.	**X**		2021-remove existing; 2022-north; 2023-south
A-27	Extend cross **Taxiway H** between Runway 12R-30L and Taxiway V (for ADG-IV aircraft).	Replace with Following New Project: Construct new cross **Taxiway V7** from north end of new Taxiway V to Taxiway W (for ADG-III aircraft).	**X**		Minor Construction
A-37	Extend cross **Taxiway K** between Runway 12R-30L and Taxiway V (for ADG-IV aircraft).	Replace with Following New Project: Close existing **Taxiway V** and replace with a parallel apron-edge taxilane (for ADG-III aircraft).	**X**		Minor Phased Construction

Table 3.3-1: To-Be-Completed Projects in the Airport Master Plan					
			Preliminary Phasing		
Num-ber	**Description Under 1997 Existing Airport Master Plan (as previously amended)**	**Description Under Proposed Amendment to Airport Master Plan**	**Phase 1 (2019-2027)**	**Phase 2 (2028-2037)**	**Notes, Including Estimated Construction Start Date**
A-38	n/a (Project is not in existing Master Plan)	Construct up to **seven new taxiway connectors (V1–V7)** between the expanded west side apron (Project G-9) and new Taxiway V (for ADG-III aircraft).	**X**		Minor Phased Construction
A-39	n/a (Project is not in existing Master Plan)	Mitigate direct **access from west side apron** to Taxiways B, C, & D through pavement marking/painting or removal.	**X**		Little or no construction
A-40	n/a (Project is not in existing Master Plan)	Create up to **three new taxiway connectors (W1–W3)** between the southwest apron and Taxiway W (for ADG-II aircraft) through pavement marking/painting or removal.	**X**		Mnor Phased Construction
A-41	n/a (Project is not in existing Master Plan)	Relocate existing **general aviation run-up pad** to southwest apron area.	**X**		Little or no construction
A-42	n/a (Project is not in existing Master Plan)	Relocate **Runway 12R-30L aircraft hold positions** on all cross taxiways to current ADG-V aircraft standard.	**X**		Little or no construction
A-43	n/a (Project is not in existing Master Plan)	Widen **Runway 12L-30R blast pads**, and lengthen blast pad at 12L end, to current ADG-V aircraft standard.	**X**		Minor Construction
A-44	n/a (Project is not in existing Master Plan)	Realign existing cross **Taxiways B-F, H, J, & L** between Taxiways Y and Z to mitigate direct access from east side apron to Runway 12L-30R and rename realigned segments as Taxiways Z1–Z8 & Z10.	**X** (6 taxiways)	**X** (2 taxiways)	Minor Phased Construction

Table 3.3-1: To-Be-Completed Projects in the Airport Master Plan					
			Preliminary Phasing		
Num-ber	**Description Under 1997 Existing Airport Master Plan (as previously amended)**	**Description Under Proposed Amendment to Airport Master Plan**	**Phase 1 (2019-2027)**	**Phase 2 (2028-2037)**	**Notes, Including Estimated Construction Start Date**
A-45	n/a (Project is not in existing Master Plan)	Close existing segments of cross **Taxiways B-F, H, J, & L** between Taxiways Y and Z through pavement marking/painting or removal (upon completion of Project A-44).	**X** (6 taxiways)	**X** (2 taxiways)	Little or no construction
A-46	n/a (Project is not in existing Master Plan)	Narrow segment of existing cross **Taxiway B** between Taxiway Z and Runway 12L-30R through pavement marking/painting.	**X**		Little or no construction
A-47	n/a (Project is not in existing Master Plan)	Narrow segment of existing cross **Taxiway L** between Taxiway Y and Runway 12R-30L through pavement marking/painting.	**X**		Little or no construction
A-48	n/a (Project is not in existing Master Plan)	Close existing segments of cross **Taxiways F and H** between Runway 12R-30L and Runway 12L-30R through pavement marking/painting.	**X**		Little or no construction
A-49	n/a (Project is not in existing Master Plan)	Add pavement markings to existing parallel **Taxiways W and Y**, lateral to the adjacent runway displaced thresholds, to visually denote their use as taxiways.	**X**		Little or no construction
Terminal Projects					
T-4	Construct new public **short-term parking garage** (up to 3,000 spaces) on existing "Red" Hourly Parking lot site opposite new Terminal B.	Construct new public **short-term parking garage** (up to 5,000 spaces) and associated roadway improvements south of existing Rental Car Garage and opposite new Terminal B South Concourse (Project T-13).	**X**		2022-2023

Table 3.3-1: To-Be-Completed Projects in the Airport Master Plan					
			Preliminary Phasing		
Num-ber	**Description Under 1997 Existing Airport Master Plan (as previously amended)**	**Description Under Proposed Amendment to Airport Master Plan**	**Phase 1 (2019-2027)**	**Phase 2 (2028-2037)**	**Notes, Including Estimated Construction Start Date**
T-6	Remove former temporary **FIS facility** from ramp south of Terminal C and remove City office structures at 1311 Airport Blvd.	FIS removal already completed. Remaining phase of T-6 to be completed as described in the existing Airport Master Plan.	**X**		Minor Construction
T-8	Construct new public **long-term parking garage** (up to approx. 9,000 spaces) on existing interim rental car ready/return parking lot site, including interim surface parking at site prior to garage construction, second 2-lane bridge accessing site from Airport Blvd. and, upon completion, removal of public parking from interim west side lot.	Construction of interim surface parking, 1st phase of garage, and removal of interim parking from west side already completed or in progress. Remaining phase of T-8 will remove the interim surface lot and complete the new **public long-term parking garage** (up to 6,000 spaces) with access from Airport Blvd. using the existing 2-lane bridge.	**X**		2020-2021
T-13	Expand **Terminal B (South Concourse)** to south onto remainder of demolished Terminal C site, consisting of up to 700,000 ft^2 and 10 air carrier gates (ultimate total of 40 gates and 1.70 million ft^2).	Expand **Terminal B (South Concourse)** to south, including up to an additional 14 air carrier gates and 750,000 ft^2 of building space, and associated passenger processing facilities (ultimate terminal complex total of up to 42 gates and 1.80 million ft^2) .	**X** (12 gates)	**X** (2 gates)	2024-2026 (12 gates); 2033-2034 (2 gates)
T-16	n/a (Project is not in existing Master Plan)	Construct new multi-story **business hotel** south of and adjacent to new public short-term parking garage (Project T-4), up to 300,000 ft^2 in size including up to 330 guest rooms and 300 parking spaces.	**X**		2026-2027

Table 3.3-1: To-Be-Completed Projects in the Airport Master Plan					
			Preliminary Phasing		
Num-ber	**Description Under 1997 Existing Airport Master Plan (as previously amended)**	**Description Under Proposed Amendment to Airport Master Plan**	**Phase 1 (2019-2027)**	**Phase 2 (2028-2037)**	**Notes, Including Estimated Construction Start Date**
Air Cargo Projects					
C-2	Construct new **cargo airline facilities** at or adjacent to existing east side cargo airline areas, including up to 1.2 million ft^2 of ramp, building, and vehicle parking/movement space.	Expand **cargo airline facilities** at or adjacent to existing east side cargo airline areas, with up to 200,000 ft^2 of additional ramp, building, and vehicle parking and movement space (cargo airline facility total of up to 500,000 ft^2).	**X** (100,000 ft^2)	**X** (100,000 ft^2)	Minor Phased Construction
C-3	Relocate **belly-freight facilities** to new site(s) on east side of Airport, including up to 93,000 ft^2 building and vehicle parking/movement space.	Relocate **belly-freight facilities** to new site(s) on east side of Airport, including up to 150,000 ft^2 of ramp, building, and vehicle parking and movement space.	**X**		2021-2022
C-4	Remove existing **Air Freight Building** and vehicle parking/movement area (displaced by Project T-13 and T-15).	No change from the description in the existing Airport Master Plan.	**X**		Minor Construction
General Aviation Projects					
G-5	Remove **San José State University facilities** at southwest side upon lease expiration in 2010 and convert site to aviation support or general aviation facility use.	Removal of SJSU facilities already completed. Remaining phase of G-5 to be completed as described in the existing Airport Master Plan.	**X**		Minor Construction
G-6	Establish new **FBO leaseholds** on west side for reconfiguration of general aviation facilities.	Partially complete. Remaining phase of G-6 to be completed as described in the existing Airport Master Plan.	**X**		Little or no construction

Table 3.3-1: To-Be-Completed Projects in the Airport Master Plan					
			Preliminary Phasing		
Num-ber	**Description Under 1997 Existing Airport Master Plan (as previously amended)**	**Description Under Proposed Amendment to Airport Master Plan**	**Phase 1 (2019-2027)**	**Phase 2 (2028-2037)**	**Notes, Including Estimated Construction Start Date**
G-8	Expand **general aviation facilities** onto northwest side of Airport (44 acres, upon implementation of Project T-7 and T-8).	Partially complete. Remaining phase of G-8 to be completed as described in the existing Airport Master Plan.	**X**		2023-2025
G-9	n/a (Project is not in existing Master Plan)	Expand west side **general aviation apron** out to edge of new parallel taxilane (Project A-37).	**X**		2023-north; 2024-south
G-10	n/a (Project is not in existing Master Plan)	Reconfigure **southwest apron tiedown** storage facilities (to accommodate Projects A-40, A-41, and G-5).	**X**		Little or no construction
Aviation Support Projects					
S-1	Construct approx. 7-acre **fuel storage facility** (up to 8 tanks, 4.0 million gallons capacity) on vacant parcel north of Hwy. 101, two-acre fuel dispensing facility between Terminal A and north end of airfield, and pipeline connecting storage and dispensing.	Construction of first phase (3 tanks with 2.0-million gallons capacity) & fuel dispensing facility already completed. Remaining phase of S-1 to be completed as described in the existing Airport Master Plan.		**X**	2035-2036
S-3	Relocate/expand **airport maintenance facilities** at existing or new sites on east side of Airport.	Relocate/expand **airport maintenance facilities** at new site(s) on east or west sides of Airport.	**X**		Minor Construction
S-4	Expand **flight kitchen facilities** at existing or new sites on east side of Airport or relocate/expand off-airport.	No change from the description in the existing Airport Master Plan.	**X**		Minor Construction
S-5	Relocate/expand **airline maintenance-storage facilities** at various or new sites on east side of Airport.	Relocate/expand **airline maintenance-storage facilities** at various existing or new sites on east or west sides of Airport.	**X**	**X**	Minor Construction

Table 3.3-1: To-Be-Completed Projects in the Airport Master Plan					
			Preliminary Phasing		
Number	**Description Under 1997 Existing Airport Master Plan (as previously amended)**	**Description Under Proposed Amendment to Airport Master Plan**	**Phase 1 (2019-2027)**	**Phase 2 (2028-2037)**	**Notes, Including Estimated Construction Start Date**
S-6	Remove, relocate, or upgrade existing **aviation support facilities** on southeast side of Airport (1239-1311 Airport Blvd.) to or at various existing or new eastside sites.	Remove, relocate, or upgrade existing **aviation support facilities** on southeast side of Airport (1239-1311 Airport Blvd.) at various existing or new sites on east or west sides of Airport.	**X**	**X**	Minor Construction

Note: Project phasing is estimated based on multiple factors including, but not limited to, existing and forecasted activity levels, construction staging constraints, trends in passenger travel mode (e.g., driving, transit, ridesharing, etc.), and the availability of funding. These factors are subject to change and, therefore, the timing of construction of various projects is also subject to revision. Pursuant to CEQA Guidelines Section 15162, if timing is revised, the City will assess whether any impacts would change from those disclosed in this EIR.

Table 3.3-2: Key Facilities at the Airport			
	2018 Actual [d]	**2037 No Project Alt. #2 (Buildout under Existing Master Plan)**	**2037 Project (Buildout under Proposed Amended Master Plan)**
Airfield			
Runway 12R/30L Length (feet)	11,000	11,000	11,000
Runway 12L/30R Length (feet)	11,000	11,000	11,000
Runway 11/29 Length (feet)	4,600 [a]	4,600	Removed
Terminals			
Air Carrier Gates	36 [b]	40	42
Terminal Building (ft^2)	1,050,000	1,700,000	1,800,000
Public Parking Spaces	6,600	12,700	12,700
Employee Parking Spaces	1,500	2,600	3,700
Rental Car Ready Return Spaces	2,000	2,000	2,000
Air Cargo			
All-Cargo Airline Area (ft^2)	300,000	1,200,000	500,000
Belly-Freight Area (ft^2)	85,000	93,000	150,000
General Aviation			
General Aviation Facilities (acres)	88 [c]	100	88
Aviation Support			
Jet Fuel Bulk Storage (gallons)	2,000,000	4,000,000	4,000,000

Notes:
[a] Runway 11/29 has been closed since 2009 and is being used as a taxiway.
[b] Includes 8 interim gates at the south end of Terminal B, which would be replaced by the planned Terminal B South Concourse.
[c] Includes a new hangar and aircraft apron approved in 2018 and under construction in 2019.
[d] This also represents the No Project Alternative #1 – No New Facilities.

The proposed permanent closure of Runway 11/29 will have minimal effect on the capacity of the airfield. This statement is based on the conclusions of an airfield capacity analysis undertaken for the Airport in 2017:[17]

Per Table 3.3-3, the weighted hourly capacity of the airfield could sufficiently accommodate the 2037 demand, both with and without Runway 11/29.

[17] Kimley Horn Associates, RIM Study Technical Memorandum: Updated Airport Capacity and Facility Requirements Analysis, September 2017.

Table 3.3-3: Weighted Hourly Airfield Capacity [Aircraft Operations]		
Airfield Configuration	**2016**	**2037**
With Runway 11/29	82	81
Without Runway 11/29	74	73

Per Table 3.3-4, the annual service volume of the airfield is greater than the projected total demand of 237,710 aircraft operations in 2037, both with and without Runway 11/29

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Table 3.3-4: Airfield Annual Service Volume [Aircraft Operations][18]		
Airfield Configuration	**2016**	**2037**
With Runway 11/29	265,693	267,003
Without Runway 11/29	240,363	241,700

Per Table 3.3-5, the calculated average aircraft delay on the airfield, both with and without Runway 11/29, will be well-within the acceptable range. Practical airfield capacity typically only becomes an issue of concern when average delay begins to exceed 4-6 minutes.

Table 3.3-5: Average Aircraft Delay [Minutes]	
Airfield Configuration	**Average Delay**
Year 2037 - With Runway 11/29	3.26 minutes
Year 2037 - Without Runway 11/29	2.00 minutes

3.3.2 Terminal Projects

The following improvements are part of the Project in the terminal area of the Airport:

Project T-4 would construct a new short-term, public parking garage (with up to 5,000 spaces) and associated roadway improvements south of the existing Rental Car Garage and opposite the new Terminal B South Concourse (Project T-13). The proposed site for the garage is presently used as a temporary surface parking lot.

Project T-6 would remove City office structures that are located at 1311 Airport Boulevard.

[18] Annual Service Volume (ASV) is the maximum number of aircraft operations an airfield can accommodate in a one-year period without excessive delay. ASV does not represent an absolute limit of operational capability of an airfield, but it is indicative of a level of service. Many airports operate above their calculated ASV.

Project T-8 would construct a long-term, public parking garage (with up to approximately 6,000 spaces) and associated access improvements at the northeast corner of the Airport adjacent to the U.S. 101/State Route 87 interchange. The proposed site for the garage is presently used as a temporary surface lot for long-term parking. Access to the garage would be via the existing 2-lane bridge.

Project T-13 would expand Terminal B by constructing the South Concourse and adding an additional 14 air carrier gates.[19] Upon completion of Project T-13, there would be a total of 42 air carrier gates within terminals totaling 1,80 million ft^2 at the Airport.

Project T-16 would construct new multi-story business hotel south of and adjacent to the new public short-term parking garage (Project T-4). The hotel would be up to 300,000 ft^2 in size including up to 330 guest rooms and 300 parking spaces. Its height would not exceed the height of the adjacent rental car garage, which is approximately 106 feet.

3.3.3 Air Cargo Projects

The following improvements to air cargo facilities at the Airport are part of the Project:

Project C-2 would construct new cargo airline facilities at or adjacent to the existing east side cargo airline areas, including up to 500,000 ft^2 of ramp, building, and vehicle parking and movement space. The existing air cargo facilities are located in the northeast and southeast portions of the Airport (see Figure 2.4-1).

Project C-3 would relocate belly-freight facilities to new site(s) on the southeast side of Airport, including up to 150,000 ft^2 of ramp, building, and vehicle parking and movement space.

Project C-4 would remove the existing air freight building (1521 Airport Boulevard) and its associated vehicle parking/movement area to allow for the construction of Project T-13.

3.3.4 General Aviation Projects

The following improvements to general aviation facilities at the Airport are part of the Project:

Project G-5 would allow for general aviation or aviation support facilities to be constructed on a 4.5-acre site located in the southwest corner of the Airport, a site that was formerly leased to the San José State University Department of Aviation.

Project G-6, which has been partially implemented, would allow for the continued establishment of new FBO leaseholds on west side of the Airport.

Project G-8, which has been partially implemented, would continue the expansion of general aviation facilities onto 44 acres located on the northwest side of the Airport.

[19] Eight interim gates were constructed at the location of the Terminal B South Concourse. These interim gates will be removed/replaced when the South Concourse is constructed.

Project G-9 would expand the west side general aviation apron out to the edge of the new parallel taxilane (Project A-37).

Project G-10 would reconfigure the existing southwest apron tiedown storage facilities to accommodate Projects A-40, A-41, and G-5.

3.3.5 Aviation Support Projects

The following improvements to aviation support facilities at the Airport are part of the Project:

Project S-1 would expand the Airport's fuel storage facility, which is located on the north side of U.S. 101. The expansion would double the facility's capacity from 2,000,000 gallons to 4,000,000 gallons.

Project S-3 would relocate/expand airport maintenance facilities at new site(s) on the east or west sides of the Airport.

Project S-4 would expand flight kitchen facilities at existing or new sites on the east side of the Airport. Alternatively, those facilities may relocate/expand at off-airport sites.

Project S-5 would relocate/expand airline maintenance-storage facilities at various existing or new sites on the east or west sides of the Airport.

Project S-6 would remove, relocate, or upgrade the existing aviation support facilities that are located on the southeast side of the Airport (1239-1311 Airport Boulevard) to various existing or new sites on the east or west sides of the Airport.

3.4 PROJECT OBJECTIVES

The principal goal of the City when it adopted the Airport Master Plan in 1997 was to have a development plan for the future of the Airport that best reflects community needs. The City's *Envision San José 2040 General Plan* sets forth the goals and policies that address the future growth and development of the community. It includes adopted aviation goals and policies that pertain to the development of the Airport, as follows:

- *Policy IE-4.2:* Continue developing a world-class airport and build national and international connections by attracting new air service to it.

- *Policy IE-4.3:* Support development of a transit link connecting the Mineta San José International Airport with light rail transit, Caltrain, and future BART.

- *Policy IE-4.5:* Continue implementation of improvements to Mineta San José International Airport facilities pursuant to the Airport Master Plan to maintain and expand regional, trans-continental, and international Airport operations.

- *Policy IE-4.9:* Pursue implementation of a people-mover that serves terminals at the Mineta San José International Airport and provides convenient connection to light rail and future BART transit systems.

- *Policy TR-13.1:* Promote airline service which meets the present and future air transportation needs of residents and the business community, and which minimizes impacts on the surrounding community.

- *Policy TR-13.2:* Implement capital improvements to Mineta San José International Airport as identified in its Airport Master Plan.

- *Policy TR-13.3:* Develop and encourage improved ground access connections between the Mineta San José International Airport and area freeways and public transit and rail systems.

In addition, Airport staff, in developing the adopted Airport Master Plan, utilized the following project objectives:

- To identify a phased program of specific airfield and landside facility improvements to accommodate, to the extent reasonable and feasible, current and future demand for commercial air carrier services.

- To develop a land use and facility plan that designates the most efficient and productive aviation-related use of all Airport property in conformance with all applicable FAA standards.

- To balance future development with the mitigation of adverse aircraft noise and other environmental impacts.

The above-listed objectives and goals that were used when the Airport Master Plan was adopted in 1997 are the same for the proposed amendment to the Airport Master Plan that are the subject of the analyses contained in this EIR.

3.5 USES OF THE EIR

Except as noted in the next sentence, this EIR is intended to provide project-level review under CEQA for the implementation of the capital improvement projects identified in the Airport Master Plan. The exception is for the following projects where the existing lack of detail regarding size and/or location will warrant further assessment under CEQA: Projects G-5, G-6, G-8, S-3, S-4, S-5, and S-6.

This EIR is also intended to replace the 1997 EIR, 2003 Supplemental EIR, and various Addenda to the 1997 EIR on the Airport Master Plan. If the proposed amendment to the Airport Master Plan (i.e., the Project) that is the subject of this EIR is not approved and the City Council decides to proceed with the currently-adopted Airport Master Plan (i.e., the No Project - Buildout of the Airport under Existing Airport Master Plan Alternative described in Section 8), this EIR, if certified, is intended to provide environmental review under CEQA for the remaining planned-but-as-yet-to-be-constructed projects.

The information contained in this EIR will be used by some or all of the following federal state, and local agencies in their respective roles to review or approve applicable portions of the Project:

- The City of San José is the CEQA Lead Agency for the proposed Project. The City assumes the responsibility of complying with CEQA and has the authority to approve the Project. In addition, the City would comply with any other applicable internal and external reviews, approvals, and/or permits that may be required to implement the Project. This will include amending Section 25.04.300(B)(1) of the San José Municipal Code to increase the number of air carrier gates from 40 to 42.

- The FAA will be asked to approve all changes to the Airport Layout Plan (ALP) that will be necessary to construct the various projects identified in the amended Airport Master Plan. The FAA will also be asked to approve projects for which federal funds are requested. Prior to all such approvals, the FAA will comply with the requirements of the National Environmental Policy Act (NEPA).

- The Santa Clara County Airports Land Use Commission (ALUC) will review the proposed amendment to the Airport Master Plan for consistency with its adopted Comprehensive Land Use Plan (CLUP) for the Norman Y. Mineta San José International Airport and provide amendments to the CLUP, as necessary to maintain consistency with the amended Airport Master Plan.

- The Bay Area Air Quality Management District (BAAQMD) will be asked to issue an Authority to Construct Permit for the expansion of the fuel storage facility (Project S-1) or any other stationary source(s) of air pollutant emissions that exceed regulatory thresholds.

- The Santa Clara Valley Transportation Authority (VTA) will review any proposed new or modified transit facilities (e.g., bus stops) at the Airport.

- The City of Santa Clara, Santa Clara County Roads & Airports Department, and/or Caltrans will be asked to approve any off-Airport roadway/intersection modifications within their respective jurisdictions if any such modifications are required as conditions of Project approval.

4.0 ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION

This section presents the discussion of impacts related to the following environmental subjects in their respective subsections.

4.1	Aesthetics	4.11	Land Use and Planning
4.2	Agriculture and Forestry Resources	4.12	Mineral Resources
4.3	Air Quality	4.13	Noise
4.4	Biological Resources	4.14	Population and Housing
4.5	Cultural Resources	4.15	Public Services
4.6	Energy	4.16	Recreation
4.7	Geology and Soils	4.17	Transportation
4.8	Greenhouse Gas Emission	4.18	Tribal Cultural Resources
4.9	Hazards and Hazardous Materials	4.19	Utilities and Service Systems
4.10	Hydrology and Water Quality	4.20	Wildfire

The discussion for each environmental subject includes the following subsections:

ENVIRONMENTAL SETTING

This subsection: 1) provides a brief overview of relevant plans, policies, and regulations that compose the regulatory framework for the project and 2) describes the existing, physical environmental conditions at the project site and in the surrounding area, as relevant.

IMPACTS

Project Impacts

This subsection: 1) includes thresholds of significance for determining impacts, 2) discusses the project's consistency with those thresholds, and 3) discusses the project's consistency with applicable plans. For significant impacts, feasible mitigation measures are identified. "Mitigation measures" are measures that will minimize, avoid, or eliminate a significant impact (CEQA Guidelines Section 15370). Each impact is numbered using an alphanumeric system that identifies the environmental issue. For example, **Impact HAZ-1.1** denotes the first potentially significant impact discussed in the Hazards and Hazardous Materials section. Mitigation measures are also numbered to correspond to the impact they address. For example, **MM NOI-2.3** refers to the third mitigation measure for the second impact in the Noise section.

Cumulative Impacts

The project's cumulative impact on the resource is also discussed. Cumulative impacts, as defined by CEQA, refer to two or more individual effects, which when combined, compound or increase other environmental impacts. Cumulative impacts may result from individually minor, but collectively

significant effects taking place over a period of time. CEQA Guideline Section 15130 states that an EIR should discuss cumulative impacts "when the project's incremental effect is cumulatively considerable." The discussion does not need to be in as great detail as is necessary for project impacts but is to be "guided by the standards of practicality and reasonableness." The purpose of the cumulative analysis is to allow decision makers to better understand the impacts that might result from approval of past, present, and reasonably foreseeable future projects, in conjunction with the proposed Project addressed in this EIR.

The CEQA Guidelines advise that a discussion of cumulative impacts should reflect both their severity and the likelihood of their occurrence. To accomplish these two objectives, the analysis should include either a list of past, present, and probable future projects or a summary of projections from an adopted general plan or similar document. The analysis must then determine whether the project's contribution to any cumulatively significant impact is cumulatively considerable, as defined by CEQA Guidelines Section 15065(a)(3).

The cumulative discussion for each environmental issue addresses two aspects of cumulative impacts: 1) would the effects of all of the pending development listed result in a cumulatively significant impact on the resources in question? And, if that cumulative impact is likely to be significant, 2) would the contributions to that impact from the proposed project make a cumulatively considerable contribution to those cumulative impacts?

For each environmental issue, cumulative impacts may occur over different geographic areas. For example, a project's effects on air quality would combine with the effects of projects in the entire air basin, whereas aesthetic impacts would primarily be localized to the surrounding area.

Important Note to the Reader

The California Supreme Court in a December 2015 opinion in *California Building Industry Association v. Bay Area Air Quality Management District,* 62 Cal. 4th 369 *(BIA v. BAAQMD)* confirmed that CEQA, with several specific exceptions, is concerned with the impacts of a project on the environment, not the effects the existing environment may have on a project. Therefore, the evaluation of the significance of project impacts under CEQA in the following sections focuses on impacts of the project on the environment, including whether the project may exacerbate existing environmental hazards.

The City of San José has policies that address existing conditions affecting a proposed project, which are also discussed in this EIR. This is consistent with one of the primary objectives of CEQA, which is to provide objective information to decision-makers and the public. The CEQA Guidelines and the courts are clear that a CEQA document can include information of interest even if such information is not an environmental impact as defined by CEQA.

Therefore, in addition to describing the impacts of the project on the environment, this EIR will discuss existing conditions, including hazards, affecting the Airport and the surrounding environment as they relate to City of San José policies adopted to address or reduce those conditions or hazards. Such examples include, but are not limited to, locating a project near sources of air emissions that can pose a health risk, in a floodplain, geologic hazard zone, high noise environment, or on/adjacent to sites involving hazardous substances.

4.1 AESTHETICS

4.1.1 Environmental Setting

4.1.1.1 *Regulatory Framework*

California Scenic Highways Program

The California Scenic Highway Program is managed by the California Department of Transportation (Caltrans). The program is intended to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. State laws governing the Scenic Highway Program are found in the Streets and Highway Code, Sections 260 through 263. There are no state-designated scenic highways in San José.[20]

San José Scenic Corridors

The *Envision San José 2040 General Plan* identifies certain rural corridors, urban corridors, and gateways as areas that provide views of scenic resources, which are defined to include the broad sweep of the Santa Clara Valley, the hills and mountains which frame the Valley floor, the baylands, and the urban skyline itself, particularly high-rise development. General Plan policies that are designed to preserve public thoroughfares in the vicinity of the Airport that provide visual access to these scenic resources are listed in Table 4.1-1.

Table 4.1-1: General Plan Policies – Aesthetics

Policy	Description
CD-10.2	Require that new public and private development adjacent to Gateways, freeways (including U.S.101, I-880, I-680, I-280, SR17, SR85, SR237, and SR87), and Grand Boulevards consist of high-quality architecture, use high-quality materials, and contribute to a positive image of San José.
CD-10.3	Require that development visible from freeways (including U.S.101, I-880, I-680, I-280, SR17, SR85, SR237, and SR87) be designed to preserve and enhance attractive natural and man-made vistas.

The I-880, U.S. 101, and SR 87 freeways that are adjacent to the Airport are designated as urban corridors on the *Envision San José 2040 General Plan Scenic Corridors Diagram*. In addition, the *Diagram* designates the segment of Coleman Avenue at its intersection with I-880 as a Gateway.

[20] Source: California Department of Transportation. "Scenic Highways" at http://www.dot.ca.gov/design/lap/livability/scenic-highways/index.html

4.1.1.2 *Existing Conditions*

Visual Character

The Airport is located in an urbanized area of San José and Santa Clara County. The visual character of built-up portions of the Airport is typical of urbanized environments: a mix of low- to mid-rise commercial, public-use, and industrial buildings surrounded by large surface parking areas. The vicinity of the Airport is characterized by low- to mid-rise office, commercial, and industrial structures to the west and north, a residential neighborhood across SR 87 and the Guadalupe River corridor to the east, and the vacant Airport Approach Zone properties to the south. U.S. 101, SR 87, and I-880 also are in close proximity to the Airport.

The topography of the Airport and the vicinity is generally flat, with the exception of levees that have been constructed along the Guadalupe River. The most significant features visible from the Airport, and most of the Santa Clara Valley, are the surrounding mountains on three sides. The Diablo Range and Mount Hamilton lie to the east, and the Santa Cruz Mountains lie to the south and west. These mountains form an impressive backdrop to the valley, especially on clear days. The mountains are visible from most locations in and around the Airport.

The most notable visual features of the Airport are Terminals A and B and their adjacent parking garages, surface parking lots, the 65-foot FAA Air Traffic Control Tower, the FAA's VOR navigational structure in the field adjacent to De La Cruz Boulevard, aircraft hangars, general aviation facilities, air cargo facilities, and blast fences. Smaller support buildings are less visible, and runways and taxiways are scarcely visible from off-Airport locations.

In the vicinity of the Airport, highly visible features include the ramps of the SR 87/U.S. 101 interchange, Avaya Stadium, high-voltage PG&E transmission towers and lines on the east side of the Guadalupe River, and the multi-story buildings along Airport Parkway.

While urban landscaping occurs in places, little natural vegetation exists at the Airport or its vicinity with the exception of the Guadalupe River corridor along the eastern boundary of the Airport. Although vegetation has been removed from the corridor for flood control, the levees and banks support low riparian vegetation along both sides of the river, punctuated by occasional stands of trees. Open space on and in the vicinity of the Airport is limited to the west side of the Airport north of the Control Tower, the Airport parcel north of U.S. 101, the Airport Approach Zone to the south, and the Guadalupe River corridor.

Airport Views

The Airport can be seen from fixed viewpoints that are typically panoramic in scope, as well as in sequences from moving vehicles on adjacent roads. The Airport also affords views of the surrounding City and terrain of Santa Clara County. Both types of views include short-range, medium-range, and long-range views.

Short-range views of the Airport (views from a distance of one mile or less) are available from portions of Airport Boulevard, Terminal Drive, Guadalupe River, Skyport Drive, Coleman Avenue, Aviation Avenue, Martin Avenue, De La Cruz Boulevard, SR 87, I-880, and U.S. 101 as follows:

- Airport Boulevard, on the east side of the Airport, affords views of landside facilities such as parking lots and structures, terminal buildings, airport support buildings and airside facilities such as runways, taxiways, hangars, aprons and aircraft. Views of structures and aircraft along Airport Boulevard and the airside facilities at the southeastern end of the Airport are partially screened by fencing, trees and shrubs, and lighting standards.

- Terminal Drive, a loop roadway off Airport Boulevard, provides views of Terminals A and B and associated parking structures and lots.

- Guadalupe River and its associated trail run parallel to and generally provide the same type of views as Airport Boulevard (described above).

- Skyport Drive, which runs east to west between North First Street and Airport Boulevard, provides partial views of airside operations and aircraft activity. The most prominent feature from this viewpoint is the parking garage adjacent to Terminal B.

- Coleman Avenue is adjacent to the southwestern portion of the Airport from Airport Boulevard to Aviation Avenue. Along this part of Coleman Avenue, general aviation facilities and various leasehold buildings can be seen. Views of both landside and airside facilities along Coleman Avenue are partially screened by fencing and trees and shrubs planted along the road.

- Aviation Avenue, a small access road along a portion of the Airport's western border, provides access to and affords views of general aviation facilities.

- Martin Avenue is adjacent to the northwestern portion of the Airport and affords views of the FAA Control Tower, airfields, taxiways, and aircraft. Views of both landside and airside facilities along Martin Avenue are partially screened by fencing and trees and shrubs planted along the road.

- De La Cruz Boulevard provides intermittent at-grade and above-grade short-range views of the northwest end of the Airport including surface and structure parking, Terminal A, and airfield and airside facilities. Views of Airport facilities are partially screened by fencing.

- SR 87 provides intermittent at-grade and above-grade short-range views of the east side of the Airport including Terminals A and B, surface and structure parking, and air cargo facilities. Views of Airport facilities are partially screened by intervening structures and vegetation.

- I-880 runs adjacent to the Airport’s southern border and provides a clear view of the entire Airport.

- U.S. 101 provides clear views (especially on elevated interchanges) of Terminal A, surface parking, and the cargo airline ramp. Airside facilities, including runways, taxiways and aircraft, can be seen intermittently.

The Airport can also be viewed by patrons attending events at Avaya Stadium; however, those views are not public views evaluated under CEQA.

Medium-range views of the Airport (views from a distance of one to two miles) are generally obstructed by existing buildings and other structures, except for views of arriving and departing aircraft. Because of the flat topography and the visual enclosure of the airfield by structures and landscaping, the Airport generally cannot be seen in long-range views (vantage points more than two miles distant from the site). Elevated viewpoints in the Diablo Range (points in Milpitas and San José) and the Santa Cruz Mountains (points in Cupertino and unincorporated Santa Clara County) are too distant (6 to 10 miles from the Airport) to allow detailed views of Airport facilities.

Views from the Airport also can be classified as short-, medium-, and long-range. Short-range public views from the Airport are concentrated along Airport Boulevard and Terminal Drive. Terminals A and B provide fixed public views of the surrounding areas of the Airport. Airport Boulevard provides views of the Guadalupe River corridor. Terminal Drive and Terminals A and B include detailed views of aircraft and airfield facilities and activities.

Medium-range views from the Airport typically encompass large-scale structures in the vicinity such as multi-story office buildings, utility lines, and stands of trees. Long-range views from the Terminal A and B parking structures encompass the Diablo foothills, downtown San José, Santa Cruz Mountains and portions of the Cities of Santa Clara and Milpitas. The second level of both Terminals A and B provide similar but less expansive views from gate holding areas and observation decks. The most prominent landform viewable in the project vicinity is the foothills of the Diablo Range, which trend north to south across the visual field, defining the horizon in easterly views.

Light and Glare

During the day, glare at the Airport is primarily limited to reflections from windows, vehicles, and metallic or painted surfaces. FAA safety requirements prohibit any major source of glare from being present at the Airport. Substantial nighttime lighting exists at the Airport to facilitate evening operations, to provide passenger and employee safety, and to maintain security. Lighting includes runway approach lighting, runway and taxiway lighting, outside building and garage lighting, and high-level lighting in surface vehicle and aircraft parking areas and air cargo areas. All landing and departing aircraft have exterior running lights that are visible when on the ground and at low altitudes. Because the Airport is located in an urbanized area, this nighttime lighting does not substantially intrude into nearby commercial areas. The closest residential neighborhood, Rosemary Gardens, is screened by the Guadalupe River levee and tree line.

4.1.2 Discussion of Aesthetic Impacts

For the purpose of determining the significance of the project's aesthetic and visual impacts, a significant impact would occur if the project would:

1) Have a substantial adverse effect on a scenic vista

2) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway
3) 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 point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality
4) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

The project includes approximately 35 specific project components that would occur during the two phases of development (refer to Table 3.3-1). For purposes of this impact analysis, these project components are divided into two categories: those with the potential to create significant aesthetic impacts, and those that would not create such impacts. Project types that would not create significant visual impacts at the Airport include the following: 1) removal or replacement of existing pavement and/or structures to allow for replacement facilities (Projects T-6, C-4, G-5, and G-10) ; 2) changes to the taxiway and runway network (Projects A-17, A-23, A-26, A-27, and A-37 through A-49); and 3) construction of hangars and support structures (Projects C-2, C-3, G-6 through G-10, and S-1 through S-6). These projects would not create significant visual impacts because they would be either maintaining or improving existing view corridors (removal projects), affecting surfaces that are currently not aesthetically significant (runway/taxiway projects), or constructing facilities with scales that are equal to or smaller than surrounding ones (support projects).

The proposed construction or modification of large-scale structures at the Airport would have the potential to create aesthetic impacts. These structures are all located on the east side of the Airport and include: 1) a multi-story public short-term parking garage (Project T-4); 2) a multi-story public long-term parking garage (Project T-8)[21]; 3) expansion of Terminal B to include roughly ~~700,000~~ 750,000 additional square feet and ~~10~~14 additional air carrier gates (Project T-13)[22]; and 4) a multi-story business hotel (Project T-16). Refer to Figure 3.3-1 for the locations of these projects and Table 3.3-1 for details of the proposed facilities. The following analysis focuses mainly on the aesthetic impacts associated with these proposed structures, as they would represent the most prominent change in aesthetic conditions at the Airport.

4.1.2.1 *Impacts on a Scenic Vista*

Impact AES-1:	**The Project would not have a substantial adverse effect on a scenic vista. (Less Than Significant Impact)**

A scenic vista is generally defined as an expanded view of an area that is visually and aesthetically pleasing. The Airport is not located within a designated scenic vista, nor is it located on a hill or along a ridgeline. Due to the flat topography of the project area, adjacent development and vegetation limit

[21] Construction of the first phase of Project T-8, which is an approved project under the existing Master Plan, will begin in late 2019 or early 2020.
[22] There are currently 20 gates operating at Terminal B, eight of which are interim gates. The eight interim gates were constructed at the location of the future Terminal B South Concourse. These interim gates will be removed/replaced with the expansion of Terminal B~~, resulting in a net increase of two gates compared to existing conditions~~.

views of Airport facilities to the immediate surrounding area. For these reasons, the Project would not have a substantial adverse effect on a scenic vista. **(Less Than Significant Impact)**

4.1.2.2 *Impacts to Scenic or Historic Resources within a State Scenic Highway*

Impact AES-2:	**The Project would not substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. (No Impact)**

As described above, the Airport is not located along, or in proximity to an officially designated state scenic highway. For this reason, the proposed Project would not damage scenic resources within a state scenic highway. **(No Impact)**

4.1.2.3 *Degradation of Existing Visual Character*

Impact AES-3:	**The Project would not substantially change the visual character of the project area. (Less Than Significant Impact)**

The courts have ruled that under CEQA, "the question is whether a project would affect the environment of persons in general, not whether a project would affect particular persons." (*Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477, 492; see also *Pocket Protectors v. City of Sacramento* (2004) 124 Cal.App.4th 903, 929.) This ruling is relevant to the visual impacts of the proposed Project, because some of the improvements in the Airport Master Plan could affect private views from the offices and residences located in the vicinity of the Airport; however, based on the court's ruling, the visual impact analysis is based on how the Project would impact public views.

To assist in assessing potential aesthetic impacts to public views, photosimulations were completed to show the Airport under full project buildout conditions when construction the proposed large structures would be completed (refer to Figures 4.1-2 through 4.1-5). Photos showing existing conditions are included for comparison. The photosimulations are presented from prominent public viewpoints of the Airport from U.S. 101, SR 87, and Coleman Avenue near its intersection with I-880 (refer to Figure 4.1-1). With the construction of several large structures on the east side of the Airport, the project would affect westward views of the Santa Cruz Mountains from public vantage points east of the Airport, including SR 87, Skyport Drive, and the Guadalupe River Trail. However, views of the mountains from these vantage points are already intermittent and partially obscured under existing conditions due to existing structures at the Airport along with surrounding development and vegetation. The addition of structures to a developed Airport that currently contains many large structures would not represent a substantial change to views from these public vantage points. The overall change in views of the existing developed areas of the Airport from off-site locations would be comparable to the existing views of the Airport in its urban context.

New or expanded multi-level structures would partially obstruct long-range panoramic views of the mountains surrounding the South Bay from on-Airport viewpoints. However, the extent of obstruction is not expected to be substantial, and the new and expanded structures would themselves provide viewpoints of the mountains.

PHOTOSIMULATION LOCATIONS

FIGURE 4.1-1

Existing

Proposed

Source: Digital Imaging Studio, Aug. 2019

PHOTOSIMULATION VIEWPOINT 1

FIGURE 4.1-2

Existing

Proposed

Source: Digital Imaging Studio, Aug. 2019

PHOTOSIMULATION VIEWPOINT 2 | FIGURE 4.1-3

Existing

Proposed

Source: Digital Imaging Studio, Aug. 2019

PHOTOSIMULATION VIEWPOINT 3 | FIGURE 4.1-4

Existing

Proposed

Source: Digital Imaging Studio, Aug. 2019

PHOTOSIMULATION VIEWPOINT 4 | FIGURE 4.1-5

Development at the Airport would not block existing scenic views nor have demonstrable negative aesthetic effects. Although the intensity of development at the Airport would increase due to an increase in the number and size of on-Airport structures, these structures would be similar in bulk and mass to some existing structures at the Airport and to structures that are present in the immediate vicinity. The Project, therefore, would not substantially change the visual character of the project area. **(Less Than Significant Impact)**

4.1.2.4 *Light and Glare Impacts*

Impact AES-4:	**The Project would not create a new source of light and glare that would adversely affect day or nighttime views in the area. (Less Than Significant Impact)**

Increased ground vehicle traffic, aircraft traffic, and parking would result from additional aviation-related activity. The increase in ground vehicles and aircraft at the Airport, both moving and stationary, would generate additional glare during the day. At night, the increase in aircraft and vehicle operations would add to existing ambient illumination levels. However, the effects of light and glare on medium and long-range viewpoints would be ameliorated by distance as well as intervening structures and landscaping in the Airport vicinity. From short-range viewpoints beyond the Airport boundaries, the effects of light and glare would be reduced by existing and proposed structures, trees, and other vegetation landscape in the foreground. Sources of new stationary night lighting would include exterior and interior lighting for structures, security lighting, parking lot lighting, and airfield lighting for runway and taxiway improvements. Runway and taxiway improvements would increase the area of the Airport illuminated at night but would not introduce new sources of high-intensity light emissions (e.g., strobe lights).

Some proposed project components would reduce existing light and glare at the Airport. The proposed parking garages would decrease light and glare currently emitted from surface parking areas along Airport Boulevard. Removal of surface parking lots also would reduce light and glare.

The levels of light and glare after project implementation would remain typical of existing commercial and industrial development in the vicinity of the Airport. All fixtures at the Airport would be designed to direct light sources downward to prevent unnecessary light spillage. The Project, therefore, would not create new sources of light and glare that would adversely affect day or nighttime views in the area. **(Less Than Significant Impact)**

4.1.2.5 *Cumulative Impacts*

Impact AES-C:	**The Project would not result in a cumulatively considerable contribution to a significant cumulative aesthetics impact. (Less Than Significant Cumulative Impact)**

The geographic area for cumulative aesthetic impacts is limited to the Airport and adjacent development in which the project site would be visible. The Airport is not located along or visible

from a designated state scenic highway or a scenic vista. Although the project would alter the visual character of the project area, the project would be comparable in massing and scale to existing development at the Airport and the surrounding area. For these reasons the project would not result in a cumulatively considerable contribution to a cumulative aesthetic impact. **(Less Than Significant Cumulative Impact)**

4.2 AGRICULTURE AND FORESTRY RESOURCES

4.2.1 Environmental Setting

4.2.1.1 *Regulatory Framework*

State

Farmland Mapping and Monitoring Program

The California Department of Conservation's Farmland Mapping and Monitoring Program (FMMP) assesses the location, quality, and quantity of agricultural land and conversion of these lands over time. Agricultural land is rated according to soil quality and irrigation status. The best quality land is called Prime Farmland. In CEQA analyses, the FMMP classifications and published county maps are used, in part, to identify whether agricultural resources that could be affected are present on-site or in the project area.[23]

California Land Conservation Act

The California Land Conservation Act (Williamson Act) enables local governments to enter into contracts with private landowners to restrict parcels of land to agricultural or related open space uses. In return, landowners receive lower property tax assessments. In CEQA analyses, identification of properties that are under a Williamson Act contract is used to also identify sites that may contain agricultural resources or are zoned for agricultural uses.[24]

Forest Land, Timberland, and Timberland Production

The California Department of Forestry and Fire Protection (Cal Fire) identifies forest land, timberland, and lands zoned for timberland production that can (or do) support forestry resources.[25] Programs such as Cal Fire's Fire and Resource Assessment Program (FRAP) are used to identify whether forest land, timberland, or timberland production areas that could be effected are located on or adjacent to a project site.[26]

4.2.1.2 *Existing Conditions*

The Airport is not designated as farmland. According to the *Santa Clara County Important Farmland 2016 Map*, the airport is designated as *Urban and Built-Up Land* and *Other Lands*.[27] The Airport and surrounding properties are designated for and developed with urban uses. There are no areas within

[23] California Department of Conservation. "Farmland Mapping and Monitoring Program". http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx., accessed August 2019.
[24] California Department of Conservation. "Williamson Act". http://www.conservation.ca.gov/dlrp/lca.
[25] *Forest land* is land that can support 10 percent native tree cover and allows for management of one or more forest resources, including timber, fish, wildlife, and biodiversity (California Public Resources Code Section 12220(g)); *Timberland* is land not owned by the federal government or designated as experimental forest land that is available for, and capable of, growing a crop of trees used to produce lumber and other forest products, including Christmas trees (California Public Resources Code Section 4526); and *Timberland Production* is land devoted to and used for growing and harvesting timber and other compatible uses (Government Code Section 51104(g)).
[26] Cal Fire. "FRAP". http://frap.fire.ca.gov/
[27] California Department of Conservation. *Santa Clara County Important Farmland 2016*. September 2018.

the Airport nor surrounding properties that are designated as *Prime Farmland*, *Farmland of Statewide Importance*, *Unique Farmland*, or *Farmland of Local Importance.*

There is no forest land or land subject to a Williamson Act contract located on the Airport.[28]

Most of the Airport property is currently developed with runways, taxiways, roadways, buildings, parking facilities and aviation support facilities. Unpaved areas at the Airport are not used for agricultural purposes.

4.2.2 Discussion of Impacts to Agriculture and Forestry Resources

For the purpose of determining the significance of the project's impacts on agriculture and forestry resources, a significant impact would occur if the project would:

1) 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
2) Conflict with existing zoning for agricultural use, or a Williamson Act contract
3) 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))
4) Result in a loss of forest land or conversion of forest land to non-forest use
5) 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.

4.2.2.1 *Project Impacts*

Impact AG-1:	**The Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, 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)**

As discussed previously, the Airport is not designated as farmland. The Airport and surrounding properties are designated and developed with urban uses. For these reasons, the Project would not convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance to non-agricultural use. **(No Impact)**

Impact AG-2:	The Project would not conflict with existing zoning for agricultural use, or a Williamson Act contract. **(No Impact)**

[28] County of Santa Clara Department of Planning and Development. "Williamson Act and Open Space Easement." Accessed: January 22, 2019. Available at: https://www.sccgov.org/sites/dpd/Programs/WA/Pages/WA.aspx.

The Airport is not zoned for agricultural use, nor is it subject to a Williamson Act contract. The Project, therefore, would not conflict with zoning for agricultural use or a Williamson Act contract. **(No Impact)**

Impact AG-3:	The Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. **(No Impact)**

The Airport and surrounding properties are not zoned for forest land or timberland. For this reason, the Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. **(No Impact)**

Impact AG-4:	**The Project would not result in a loss of forest land or conversion of forest land to non-forest use. (No Impact)**

The Airport and surrounding properties are developed with urban uses, not forest land. For this reason, the development of the Project would not result in the loss of forest land or conversion of forest land to non-forest use. **(No Impact)**

Impact AG-5:	**The Project would not 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 Airport is not designated agricultural or forest land and is located within a developed urban area with no agricultural or forestry land directly nearby. As a result, implementation of the proposed Project would not result in the conversion of farmland to non-agricultural use or forest land to non-forest uses. **(No Impact)**

4.2.2.2 *Cumulative Impacts*

Impact AG-C:	**The Project would not result in a cumulatively considerable contribution to a significant agricultural and forestry resources impact. (No Cumulative Impact)**

As discussed under Impacts AG-1 through AG-5, the Project would not impact agricultural or forestry resources. For this reason, the Project would not have a cumulative agricultural and forestry resources impact. **(No Cumulative Impact)**

4.3 AIR QUALITY

The following discussion is based on an Air Quality and Health Risk Assessment prepared by Ramboll US Corporation in October 2019. The report is included as Appendix D to this EIR.

4.3.1 Criteria Air Pollutants and Regulatory Framework

4.3.1.1 *Federal and State Standards*

Ambient air quality standards have been established at both the state and federal level. The ambient air quality in a given area depends on the quantities of pollutants emitted within the area, transport of pollutants to and from surrounding areas, local and regional meteorological conditions, as well as the surrounding topography of the air basin. Air quality is described by the concentration of various pollutants in the atmosphere. Units of concentration are generally expressed in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$).

As required by the federal Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants, known collectively as criteria air pollutants: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter, including respirable particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$), sulfur oxides (SO_x), and lead (Pb).[29] Pursuant to the California Clean Air Act, the state has established the California Ambient Air Quality Standards (CAAQS).[30] Both state and federal standards are summarized in Table 4.3-1. CAAQS are generally the same or more stringent than NAAQS.

Specific geographic areas are classified as either "attainment" or "non-attainment" areas for each pollutant based upon the comparison of measured data with the NAAQS and CAAQS. Those areas designated as “non-attainment” for purposes of NAAQS compliance are required to prepare regional air quality plans, which set forth a strategy for bringing an area into compliance with the standards. These regional air quality plans developed to meet federal requirements are included in an overall program referred to as the State Implementation Plan (SIP). The San Francisco Bay Area Air Basin meets all ambient air quality standards with the exception of ground-level O_3, PM_{10}, and $PM_{2.5}$.[31]

4.3.1.2 *Regional Air Quality Management Programs*

The Bay Area Air Quality Management District (BAAQMD) has jurisdiction over air quality issues within the San Francisco Bay Area Air Basin. BAAQMD’s responsibilities include attaining and maintaining air quality standards in through air quality planning, adoption of rules and regulations, enforcement, technical innovation, issuance of permits for stationary sources of air pollution, and promotion of the understanding of air quality issues. BAAQMD also prepares air quality plans with control measures to attain the NAAQS in the San Francisco Bay Area Air Basin. For example, the 1994 Carbon Monoxide Maintenance Plan was developed in coordination with the Association of Bay Area Governments to ensure continued attainment of the national CO standard.

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[29] USEPA. NAAQS Table. Available at: https://www.epa.gov/criteria-air-pollutants/naaqs-table. Accessed: October 2019.

[30] CAAQS. Available at: http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm. Accessed: October 2019.

[31] The San Francisco Bay Area Air Basin consists of all of San Francisco, Marin, San Mateo, Alameda, Napa, Contra Costa, and Santa Clara Counties, as well as the southern portion of Sonoma County and the western portion of Solano County.

Table 4.3-1: Ambient Air Quality Standards					
Pollutant	**Averaging Time**	**California Standards[a]**	**Attainment Status**	**National Standards[a]**	**Attainment Status**
Ozone (O_3)	8-hour	0.07 ppm	N	0.07 ppm	N
	1-hour	0.09 ppm	N	---	---
Carbon Monoxide (CO)	8-hour	9.0 ppm	A	9.0 ppm	A
	1-hour	20 ppm	A	35 ppm	A
Nitrogen Dioxide (NO_2)	Annual	0.030 ppm	A	0.053 ppm	A
	1-hour	0.18 ppm	A	0.100 ppm[e]	U
Sulfur Dioxide (SO_2)	Annual	---	---	0.030 ppm	A
	24-hour	0.04 ppm	A	0.14 ppm	A
	1-hour	0.25 ppm	A	0.075 ppm	A
Respirable Particulate Matter (PM_{10})	Annual	20 µg/m^3	N	---	---
	24-hour	50 µg/m^3	N	150 µg/m^3	U
Fine Particulate Matter ($PM_{2.5}$)	Annual	12 µg/m^3	N	12 µg/m^3	U/A
	24-hour	---	---	35 µg/m^3	N
Lead (Pb)	Calendar quarter	---	---	1.5 µg/m^3	A
	30-day average	1.5 µg/m^3	A	---	---

Notes: ppm = parts per million, µg/m^3 = micrograms per cubic meter, A = Attainment, N = Nonattainment, U = Unclassified.

[a] California standards for O_3, CO, sulfur dioxide, nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are not to be exceeded. National standards (other than O_3, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year.

BAAQMD has prepared both federal and state air quality plans to bring the San Francisco Bay Area Air Basin into attainment with the state and federal ozone standards. The Bay Area is currently nonattainment for ozone (both state and federal). Four air quality plans exist for the Bay Area, as follows:

- 2001 Ozone Attainment Plan, which describes the Bay Area's strategy for compliance with the federal 1-hour ozone standard. Although the United States Environmental Protection Agency

(USEPA) revoked the federal 1-hour ozone standard on June 15, 2005, the emissions reduction commitments in the plan are still being carried out by the BAAQMD.[32]

- 2005 Bay Area Ozone Strategy, which reviews the region's progress reducing ozone levels. This plan describes current conditions and charts a course for future actions to further reduce ozone and ozone precursor levels in the Bay Area and to achieve compliance with the state 1-hour ozone standard.[33]
- 2010 Clean Air Plan, which provides control strategies to reduce ozone, PM, air toxics, and greenhouse gases (GHGs) from stationary and mobile sources, specifically addresses nonattainment of the state ozone standards in the San Francisco Bay Area Air Basin.[34]
- 2017 Clean Air Plan, which provides control strategies for ozone, PM, toxic air contaminants (TACs), and GHGs, and is aimed at reducing air pollution, protecting public health, and protecting the global climate. The 2017 Clean Air Plan includes the first ever Regional Climate Protection Strategy and has a total of 85 control measures, categorized among nine economic sectors.[35]

In addition to the 2010 and 2017 Clean Air Plans, in 2004, BAAQMD initiated the Community Air Risk Evaluation (CARE) program. This program has helped identify communities in the Bay Area that are disproportionately impacted by local emission sources. The CARE program serves as a foundation for the BAAQMD's efforts to reduce population exposure to TACs, including diesel particulate matter (DPM), in communities that experience higher than average pollution levels. These communities are generally located near sources of pollution (e.g., freeways, industrial facilities), and thus have higher levels of risk from TAC exposure. The CARE program goals are as follows: (1) identify areas where air pollution contributes most to health impacts and where populations are most vulnerable to air pollution; (2) apply sound scientific methods and strategies to reduce health impacts in these areas; and (3) engage community groups and other agencies to develop additional actions to reduce local health impacts.[36]

BAAQMD-designated CARE communities are located in Concord, Richmond/San Pablo, eastern San Francisco, western Alameda County, Vallejo, San Rafael, Pittsburg/Antioch, and San José. The Airport and its surrounding neighborhoods are located within the CARE area in San José.

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[32] BAAQMD. 2001. Revised San Francisco Bay Area Ozone Attainment Plan for the 1-Hour National Ozone Standard. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2001-ozone-attainment-plan/oap_2001.pdf. Accessed: April 2019.

[33] BAAQMD. 2006. Bay Area 2005 Ozone Strategy. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2005-ozone-strategy/adoptedfinal_vol1.pdf. Accessed: April 2019.

[34] BAAQMD 2010. Bay Area 2010 Clean Air Plan. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2010-clean-air-plan/cap-volume-i-appendices.pdf. Accessed: April 2019.

[35] BAAQMD. 2017. Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area, Final 2017 Clean Air Plan. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed: April 2019.

[36] BAAQMD. 2014. Improving Air Quality and Health in Bay Area Communities. Community Air Risk Evaluation Program Retrospective & Path Forward (2004–2013). Available online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx?la=en. Accessed: April 2019.

4.3.1.3 *Local Air Quality Policies*

The *Envision San José 2040 General Plan* includes policies for the purpose of avoiding or mitigating impacts resulting from planned projects within the City. The policies listed in Table 4.3-2 are specific to air quality and are applicable to the proposed Project.

Table 4.3-2: General Plan Policies – Air Quality

Policy	Description
MS-10.1	Assess projected air emissions from new development in conformance with the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines and relative to state and federal standards. Identify and implement feasible air emission reduction measures.
MS-10.5	In order to reduce vehicle miles traveled and traffic congestion, require new development within 2,000 feet of an existing or planned transit station to encourage the use of public transit and minimize the dependence on the automobile through the application of site design guidelines and transit incentives.
MS-11.2	For projects that emit toxic air contaminants, require project proponents to prepare health risk assessments in accordance with BAAQMD-recommended procedures as part of environmental review and employ effective mitigation to reduce possible health risks to a less than significant level. Alternatively, require new projects (such as, but not limited to, industrial, manufacturing, and processing facilities) that are sources of TACs to be located an adequate distance from residential areas and other sensitive receptors.
MS-11.3	Review projects generating significant heavy-duty truck traffic to designate truck routes that minimize exposure of sensitive receptors to TACs and particulate matter.
MS-11.4	Encourage the installation of air filtration, to be installed at existing schools, residences, and other sensitive receptor uses adversely affected by pollution sources.
MS-11.5	Encourage the use of pollution absorbing trees and vegetation in buffer areas between substantial sources of TACs and sensitive land uses.
MS-12.1	For new, expanded, or modified facilities that are potential sources of objectionable odors (such as landfills, green waste and resource recovery facilities, wastewater treatment facilities, asphalt batch plants, and food processors), require an analysis of possible odor impacts and the provision of odor minimization and control measures as mitigation.
MS-13.1	Include dust, particulate matter, and construction equipment exhaust control measures as conditions of approval for subdivision maps, site development and planned development permits, grading permits, and demolition permits. At a minimum, conditions shall conform to construction mitigation measures recommended in the current BAAQMD CEQA Guidelines for the relevant project size and type.
MS-13.2	Construction and/or demolition projects that have the potential to disturb asbestos (from soil or building material) shall comply with all the requirements of the California Air Resources Board's air toxic control measures (ATCMs) for Construction, Grading, Quarrying, and Surface Mining Operations.

4.3.2 <u>Toxic Air Contaminants and Regulatory Framework</u>

Air quality regulations also focus on TACs. In general, air toxics that may cause cancer have no threshold concentration below which risks do not occur. However, standards for carcinogenic air toxics are established to reflect increased risks of one-in-one million to one-in-10,000, which are the values identified as de minimis by regulatory agencies. Both the USEPA's and California Air Resources Board's (CARB) regulation of hazardous air pollutants (HAPs) and TACs typically reflect the de minimis risk levels noted above, while also generally requiring the use of either the maximum available control technology or best available control technology (BACT) to limit emissions. (Note:

When BACT is applied to TACs, it is known as T-BACT.) These statutes and regulations, in conjunction with additional rules set forth by the BAAQMD, establish the regulatory framework for air toxics.[37]

4.3.2.1 *Federal*

Title III of the Clean Air Act (CAA) amendments requires the USEPA to promulgate National Emissions Standards For Hazardous Air Pollutants (NESHAPs) for the regulation of HAPs from stationary sources. Currently, there are over 125 different types of stationary sources regulated under NESHAPs. The CAA amendments also required the USEPA to issue vehicle or fuel standards containing reasonable requirements to control HAP emissions, applying at a minimum to benzene and formaldehyde. Performance criteria were established to limit mobile source emissions of HAPs, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the CAA amendments also required the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions, including the emissions of air toxics.[38]

4.3.2.2 *State*

TACs in California are primarily regulated through the Tanner Air Toxics Act and the Air Toxics Hot Spots Information and Assessment Act of 1987, also known as the Hot Spots Act. The Tanner Act sets forth a formal procedure for CARB to designate substances as TACs. To date, CARB has adopted the USEPA's list of HAPs as TACs, as well as identified more than 21 additional TACs.[39]

Once a TAC is identified, CARB adopts an Airborne Toxic Control Measure (ATCM) for sources that emit that particular TAC. If there is a concentration below which health effects are not likely to occur, the ATCM must reduce exposure below that threshold. If there is no safe concentration below which adverse health effects are not likely to occur, the measure must incorporate T-BACT to minimize emissions.

The Hot Spots Act requires existing facilities that emit toxic substances above a specified level to prepare a toxic emissions inventory; conduct a risk assessment if emissions are significant; notify the public of significant risk levels; and prepare and implement risk reduction measures.

CARB adopted a comprehensive Risk Reduction Plan in 2000 after identifying DPM as a TAC.[40] Pursuant to this plan, CARB adopted diesel-exhaust control measures and stringent emissions standards for various on-road and off-road sources of diesel emissions. Rules include the Public Transit Bus Fleet Rule and Emissions Standards for New Urban Buses, the California Diesel Fuel Regulations, On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation, and the In-Use Off-Road Diesel Vehicle Regulation.

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[37] HAPs include 187 pollutants as defined by the EPA. TACs may include additional pollutants identified by Cal/EPA and the BAAQMD beyond those specifically defined as HAPs.

[38] United States Code. Title 42. Chapter 85. Section 7554. Urban Bus Standards.

[39] CARB, 2011. Toxic Air Contaminant Identification List. Available at: http://www.arb.ca.gov/toxics/id/taclist.htm. Accessed: April 2019.

[40] CARB, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. Stationary Source Division and Mobile Source Division. October.

4.3.2.3 *Regional*

At the regional level, air pollution control or management districts may adopt and enforce the CARB's control measures and adopt their own TAC regulations. BAAQMD limits emissions and public exposure to TACs primarily through Regulation 2-5 (New Source Review of Toxic Air Contaminants) and other rules.

BAAQMD prepared Planning Healthy Places guidelines to promote efficient and sustainable land use development while ensuring clean and healthy air for residents. Planning Healthy Places was developed on the premise that regional ambient air emissions and health risk control programs do not account for localized impacts to communities located near busy roadways, factories, airports, and other sources of air pollution. BAAQMD prepared these guidelines outside the CEQA context to assist developers and land use planners in addressing potential land use compatibility issues associated with locating people close to localized sources of air pollution, specifically PM and TACs. BAAQMD identifies a list of best practices to reduce emissions or exposure of sensitive receptors located near development projects. Through Planning Healthy Places, BAAQMD denotes regions in the Bay Area near highways and busy roadways where best practices are recommended to reduce exposure and emissions, as well as regions situated close to large and complex emissions sources (e.g., ports, refineries, and gas stations) where further study is required to assess air pollution levels.

Based on the interactive map for Planning Healthy Places, the Airport and its immediate surroundings are located in an area where BAAQMD recommends further study.[41] Additionally, best practices are recommended for areas adjacent to I-880, US-101, CA-87, CA-82, and other major roadways within the study area. These recommendations are intended for development projects that will place future residential receptors near existing sources of PM and TAC emissions.

4.3.3 <u>Odors and Regulatory Framework</u>

Because odors are typically considered a local air quality problem, the USEPA has not established any odor regulations. Instead, BAAQMD enforces rules that pertain to odors in the San Francisco Bay Area Air Basin. Although offensive odors rarely cause physical harm, they can be unpleasant and generate citizen complaints. BAAQMD's Regulation 7 (Odorous Substances) places general limitations on odorous substances and specific emission limitations on certain odorous compounds. This regulation does not apply until the air pollution control officer receives, within a 90-day period, 10 or more odor complaints alleging that a person or entity has caused odors, at or beyond the source's property line, that are perceived to be objectionable by the complainants in the normal course of their work, travel, or residence. At this point, the limits in the regulation become effective until such time as no complaints have been received by the air pollution control officer for one year. The limits in the regulation become applicable again if the air pollution control officer receives odor complaints from five or more complainants within a 90-day period.

[41] BAAQMD, 2016. Planning Healthy Places. Interactive Map of Location of Communities and Places Estimated to Have Elevated Levels of Fine Particulates and/or Toxic Air Contaminants. Available at: https://www.arcgis.com/home/webmap/viewer.html?webmap=9b240e706e6545e0996be9df227a5b8c&extent=-122.5158,37.5806,-122.0087,37.8427. Accessed: April 2019.

4.3.4 Environmental Setting

The Airport is located in Santa Clara County, which is part of the nine-county San Francisco Bay Area Air Basin. The San Francisco Bay Area Air Basin does not achieve either federal or state ambient air quality standards for certain pollutants, as described below.

4.3.4.1 *Air Pollutants and Local Air Quality*

The USEPA and CARB have established health-based ambient air quality standards for several different pollutants (NAAQS and CAAQS, respectively).[42, 43] As discussed above, areas can be designated as (1) attainment, where criteria air pollutant concentrations are below the standards; (2) nonattainment, where criteria air pollutant levels exceed the standards; and (3) unclassified or unclassified/attainment, where insufficient data have been collected to determine classification. The attainment statuses of the San Francisco Bay Area Air Basin are presented in Table 4.3-1.

Pollution sources are plentiful and complex in the Santa Clara Valley portion of the San Francisco Bay Area Air Basin. The Santa Clara Valley has a high concentration of industry at the northern end, in the Silicon Valley. Some of these industries are sources of air toxics as well as criteria air pollutants. In addition, Santa Clara Valley's large population and many work-site destinations generate the highest mobile source emissions of any subregion in the San Francisco Bay Area Air Basin.[44]

4.3.4.2 *Local Air Quality Monitoring Data*

As mentioned above, ambient concentrations of pollutants are determined by regional pollutant emissions, pollutant emissions in a given area, and wind patterns and meteorological conditions for that area. As a result, ambient concentrations can vary among different locations within an area.

BAAQMD maintains ambient air quality monitoring stations throughout Santa Clara County. There are eight air quality monitoring stations in Santa Clara County: Gilroy, Los Gatos, Redwood City, Reid-Hillview Airport (San José), Palo Alto Airport, San José–Knox, San Martin, and San José–Jackson. The San José-Jackson air monitoring station is the station closest to the Airport. This station collects data for criteria air pollutants and TACs.[45]

Table 4.3-3 lists the most recent three years of published data at the San José monitoring station. As seen from these data, some violations of the state and federal Ozone, PM_{10}, and $PM_{2.5}$ ambient air quality standards occurred during this period.

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[42] USEPA. NAAQS Table. Available at: https://www.epa.gov/criteria-air-pollutants/naaqs-table. Accessed: April 2019.

[43] CAAQS. Available at: http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm. Accessed: April 2019.

[44] BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines, Appendix C. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed: April 2019.

[45] BAAQMD. 2018. 2017 Air Monitoring Network Plan. Available at: http://www.baaqmd.gov/~/media/files/technical-services/2017_network_plan_20180701-pdf.pdf. Accessed: April 2019.

Table 4.3-3: Ambient Air Quality Standards Violations				
Pollutant	**Standard**	**Days Exceeding Standard**		
		2015	**2016**	**2017**
SAN JOSÉ STATION				
Ozone	State 1-hour	0	0	3
	Federal 8-hour	2	0	4
Carbon Monoxide	Federal 8-hour	0	0	0
	State 8-hour	0	0	0
Nitrogen Dioxide	State 1-hour	0	0	0
PM_{10}	Federal 24-hour	0	0	0
	State 24-hour	1	0	6
$PM_{2.5}$	Federal 24-hour	2	0	6

4.3.4.3 *Criteria Air Pollutants of Concern and Health Effects*

The pollutants of concern in the study area are ozone, PM_{10}, $PM_{2.5}$, and CO. The San Francisco Bay Area Air Basin does not meet the state ozone, PM_{10}, and $PM_{2.5}$ standards or the federal ozone and $PM_{2.5}$ standards.

While the Bay Area has met the NO_2 standards, oxides of nitrogen (NO_X) emissions are a concern because they are precursors to ozone. Similarly, reactive organic gases (ROGs) are not criteria pollutants, however, ROG emissions are consequential because they are also precursors to ozone.[46] The Bay Area is in attainment for both state and federal CO standards. CO can be a pollutant of concern if the number of motor vehicles and vehicle miles traveled (VMT) in the area continues to grow. However, due to substantial reductions in CO emissions from mobile sources since the introduction of catalytic converters in 1975, it is only under very unusual circumstances that the potential for elevated levels of CO remains.

SO_2 is no longer considered a pollutant of concern in the state because ambient levels are fairly low and the state has been in attainment for this standard for some time. SO_2 emissions have decreased

[46] To address organic chemicals that have photochemical reactivity, BAAQMD has defined ROGs in its CEQA Air Quality Guidelines as "classes of organic compounds, especially olefins, substituted aromatics and aldehydes, that react rapidly in the atmosphere to form photochemical smog or ozone." USEPA and BAAQMD have also defined ozone precursor gases under the term volatile organic compounds (VOCs). USEPA formally defines VOCs in 40 CFR 51.100(s) as "any compound of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate, which participates in atmospheric photochemical reactions." BAAQMD defines VOCs in Regulation 1 as "any organic compound, as described in Section 1-233, which would be emitted during use, processing, application, curing, or drying of a solvent, surface coating, or other material." Organic compound is defined in Section 1-233 of Regulation 1 as "any compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides, or carbonates, and ammonium carbonate." Thus, BAAQMD's definition of VOCs is more inclusive in that it does not require gases to participate in atmospheric photochemical reactions to be defined as a VOC. In practical terms, BAAQMD's definition of ROGs is almost equivalent to the USEPA's definition of VOCs. For purposes of this section, with certain exceptions, ROGs will be referred to in the impact analysis because the BAAQMD CEQA thresholds are based on ROGs.

substantially over the past 30 years due to improved industrial source controls and the use of natural gas instead of fuel oil for electricity generation. In addition, SO_2 emissions from mobile sources have decreased due to lower sulfur content in fuels.

Similar to SO_2, lead is no longer considered a pollutant of concern in the state because ambient levels are fairly low and the state has been in attainment for this standard for some time. The phase-out of leaded gasoline in California resulted in decreasing levels of atmospheric lead. Aviation gasoline is the only remaining lead-containing transportation fuel. However, the FAA, USEPA and the general aviation industry are working to identify a replacement to aviation gasoline through the Piston Aviation Fuels Initiative[47] and phase out the use of leaded aviation gasoline.

Oxides of Nitrogen

NO_x is a precursor to ozone and is primarily emitted through the combustion of fuel by mobile sources (e.g., passenger vehicles, buses, off-road equipment) and industrial sources (e.g., power plants). When inhaled at high concentrations, NO_2, one of the types of NO_x, can cause irritation in the respiratory system. Per the USEPA, acute exposure can aggravate existing respiratory conditions (e.g., asthma) while long-term exposure may contribute to the development of asthma and potentially increase susceptibility to respiratory infections.[48]

Reactive Organic Gases

ROGs are primarily emitted by industrial facilities, through combustion of fuel by mobile and stationary sources, and by use of chemical solvents and are a precursor to ozone formation. Per the USEPA, exposure to ROG emissions can cause irritation of the eyes, nose, and throat; headaches; loss of coordination; nausea; and damage to the liver, kidney, and central nervous system. Some ROGs are known to cause cancer.[49]

Ozone

Ozone, or smog, is not emitted directly; rather, it is formed in the atmosphere through complex chemical reactions between ROG and NO_X in the presence of sunlight. Ozone formation is greatest on warm, windless, sunny days. The main sources of NO_X and ROG, often referred to as ozone precursors, are (1) combustion processes (including motor vehicle and aircraft engines); (2) the evaporation of solvents, paints, and fuels; and (3) biogenic sources. Automobiles are the single largest source of ozone precursors in the San Francisco Bay Area Air Basin.

Ozone levels usually build up during the day and typically peak in the afternoon. Short-term exposure can cause eye irritation and airway constriction. In addition to causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema. Chronic exposure

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[47] FAA Piston Aviation Fuel Initiative Future Unleaded Aviation Gasoline, July 26, 2016. Available at: https://www.faa.gov/about/initiatives/avgas/media/media/pafi_airventure_2016.pdf. Accessed May 2019.

[48] USEPA. 2017. Basic Information about NO_2. Available at: https://www.epa.gov/no2-pollution/basic-information-about-no2#What%20is%20NO2. Accessed: April 2019.

[49] USEPA. 2017. Volatile Organic Compounds' Impact on Indoor Air Quality. Available at: https://www.epa.gov/indoor-air-quality-iaq/volatile-organic-compounds-impact-indoor-air-quality. Accessed: April 2019.

to high ozone levels can permanently damage lung tissue. Ozone can also damage plants, trees, and materials such as rubber and fabrics.

Particulate Matter

PM encompasses a wide range of solid and liquid particles in the atmosphere, including smoke, dust, aerosols, and metallic oxides. In the San Francisco Bay Area Air Basin, most PM stems from combustion, factories, construction, grading, demolition, agricultural activities, and motor vehicles. Motor vehicles are currently responsible for about half of all particulates in the San Francisco Bay Area Air Basin. Wood burning in fireplaces and stoves is another large source of fine particulates. Some PM, such as pollen, is naturally occurring.

The USEPA currently regulates two types of PM emissions: PM_{10} and $PM_{2.5}$. PM_{10} (with particles less than or equal to 10 microns in diameter) is also referred to as respirable particulate matter. $PM_{2.5}$ (with particles less than or equal to 2.5 microns in diameter) is also referred to as fine particulate matter.

PM_{10} is of concern because it bypasses the body's natural filtration system more easily than larger particles and can lodge deep into the lungs. PM_{10} can be emitted directly or formed in the atmosphere through complex chemical reactions from precursor pollutants such as NO_x, oxides of sulfur (SO_x), ROGs, and ammonia. $PM_{2.5}$ poses an increased health risk relative to PM_{10} because the particles can deposit more deeply in the lungs and they contain substances that are particularly harmful to human health. Exposure to PM can increase the risk of chronic respiratory disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, and decreased lung function.

Carbon Monoxide

CO is an odorless, colorless gas that is formed by the incomplete combustion of fuels. The single largest source of CO in the San Francisco Bay Area Air Basin is motor vehicles. Emissions are highest during cold starts, hard acceleration, low speeds, and stop-and-go driving.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and lowers its oxygen-carrying capacity, resulting in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses. Even healthy people exposed to high CO concentrations can experience headaches, dizziness, fatigue, unconsciousness, and even death.

Ultrafines

Ultrafine particles (UFP) are a subset of $PM_{2.5}$ with particle diameters typically less than 0.1 micrometers (100 nanometers). UFP is not purposefully manufactured nor necessarily of a constant composition or size. Rather, UFP is the result of combustion or friction processes or natural processes in the air or water.

There is currently no ambient air standard for UFP, though the USEPA and CARB have been conducting research on UFP by supporting centers that are established to study the role of airborne

particulate matter in causing health problems.[50] Epidemiological studies have consistently found an association between small increases in urban particulates and health effects, including increased morbidity and mortality in people with respiratory and cardiac disease; the elderly are especially susceptible.[51] These health effects are associated with fine rather than coarse particles. Some other epidemiological studies have found that particle number reflecting ambient ultrafine particles correlated with increased symptoms in people with compromised respiratory and cardiovascular symptoms.[52]

Santa Clara County Emissions Inventory

According to Santa Clara County's 2015 emissions inventory, total stationary sources are the largest contributor to the estimated annual average air pollutant levels of ROG, accounting for approximately 38%, while total mobile sources (on-road and off-road) are the largest contributor to the estimated annual average air pollutant levels of CO and NO_X, accounting for approximately 84% and 77%, respectively, of the total inventory.

Area-wide sources (e.g., solvent evaporation from equipment cleaning operations), on-site fuel combustion for space and water heating (e.g., hot water heaters), and landscape maintenance equipment such as lawnmowers and leaf blowers) account for approximately 87% of Santa Clara County's PM_{10} emissions and 72% of the County's $PM_{2.5}$ emissions.[53]

Although mobile source emissions constitute the majority of the 2015 criteria air pollutant inventory both statewide and in Santa Clara County, emissions from this source category have decreased greatly since the 1970s due to more stringent federal and state emission controls on mobile sources and fuels. Examples of vehicle emissions standards include CARB's low-emission vehicle standards, CARB's heavy-duty engine standards, and USEPA's corporate average fuel economy standards for passenger cars and light duty trucks. Examples of cleaner fuel standards include the elimination of lead from gasoline and lowering of sulfur content in fuels.

Criteria air pollutant emissions from mobile sources are projected to continue decreasing with vehicle fleet turnover to newer, cleaner models.[54] However, while emissions from gasoline- and diesel-fueled mobile sources are both decreasing, a greater reduction in emissions from gasoline-fueled vehicles relative to diesel-fueled vehicles has resulted in an increase in the relative contribution of diesel sources to criteria air pollutant emissions from mobile sources. As a result, current regulatory development is focusing on reducing emissions from diesel vehicles.

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[50] CARB. 2003. Fine and Ultrafine Particulate Matter Research. Available at: https://ww3.arb.ca.gov/research/pmr/pmr.htm. Accessed: April 2019.

[51] Ohlwein, S. et al. (2019). Health effects of ultrafine particles: a systematic literature review update of epidemiological evidence. Available at: https://link.springer.com/article/10.1007/s00038-019-01202-7. Accessed: October, 2019.

[52] University of Rochester Medical Center Department of Environmental Medicine. Available at: http://www2.envmed.rochester.edu/envmed/PMC/indexPMC.html. Accessed: April 2019.

[53] CARB. 2013. Almanac Emission Projection Data. Available at: http://www.arb.ca.gov/app/emsinv/2013/emssumcat.php. Accessed April 2019.

[54] CARB. 2017. EMission FACtors Model, 2017 (EMFAC2017). Available online at: https://www.arb.ca.gov/emfac/2017/

4.3.4.4 *Toxic Air Contaminants*

In California, TACs are defined by CARB as air pollutants that "may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health."[55] To date, CARB has identified more than 21 TACs and adopted the USEPA's list of hazardous air pollutants (HAPs) as TACs.[56] USEPA defines HAPs as "pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects." Currently, there are 187 identified HAPs.[57]

The nature and magnitude of the potential health effects of TACs depends on the substance, concentration, and period of exposure. Some TACs cause effects in response to short-term (acute) exposure, while others cause effects only after sustained exposures over weeks, months, or years. The effects of acute exposure may be minor, such as watery eyes or respiratory irritation, or they may involve major damage, including damage to the reproductive or nervous system. If exposure to a sufficient concentration occurs for a sufficient period, individuals may have an increased risk of developing cancer or a greater likelihood of experiencing non-carcinogenic chronic adverse effects. Chronic non-carcinogenic health effects may be minor, such as nasal rhinitis or respiratory irritation, or they may be serious, involving long-term damage to the immune, neurological, reproductive, respiratory, or other systems.[58]

Significant sources of TACs in the environment include industrial processes such as petroleum refining, chemical manufacturing, electric utilities, metal mining/refining, and chrome plating; commercial operations such as gasoline stations and dry cleaners; and transportation activities, particularly diesel-powered vehicles, including trains, buses, and trucks.

Unlike criteria pollutants, the concentrations of individual TACs are not regulated directly; however, concentrations of TACs may be regulated indirectly based on results from a health risk assessment (HRA). An HRA is a scientifically based tool used to determine if exposure to chemical(s) pose a significant risk to human health.

According to the California Almanac of Emissions and Air Quality,[59] most of the estimated health risk from TACs in ambient air are attributed to relatively few compounds, predominantly PM exhaust from diesel engines. And, in 1998, CARB identified PM from diesel-powered engines as a TAC. DPM emissions are estimated to be responsible for about 70 percent of the total ambient air toxics risk.

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[55] CARB. 2019. Glossary of Air Pollution Terms. Available at: http://www.arb.ca.gov/html/gloss.htm#T. Accessed: April 2019.

[56] CARB. 2011. Toxic Air Contaminant Identification List. Available at: http://www.arb.ca.gov/toxics/id/taclist.htm. Accessed: April 2019.

[57] USEPA. 2019. What are Hazardous Air Pollutants? Available at: https://www.epa.gov/haps/what-are-hazardous-air-pollutants. Accessed: April 2019.

[58] Ibid.

[59] CARB, 2009a. The California Almanac of Emissions and Air Quality, Chapter 4: Air Basin Trends and Forecasts – Criteria Air Pollutants. Available at: https://www.arb.ca.gov/aqd/almanac/almanac09/chap409.htm. Accessed: April 2019.

Statewide, the average potential cancer risk associated with these emissions is 500+ potential cases per million.[60]

DPM is a complex mixture of hydrocarbons, particulates, gases, and other compounds. DPM is emitted by diesel-fueled internal combustion engines, the composition of which varies depending on engine type, operating conditions, fuel composition, lubricating oil, and presence/absence of an emission control system. Both the California Office of Environmental Health Hazard Assessment (OEHHA) and USEPA consider DPM to be a carcinogen. The cancer potency factor derived by the California Environmental Protection Agency (Cal/EPA) for DPM is highly uncertain in both the estimation of response and the dose. In the past, due to inadequate animal test data and epidemiology data on diesel exhaust, the International Agency for Research on Cancer (IARC), a branch of the World Health Organization, had classified DPM as Probably Carcinogenic to Humans (Group 2); the USEPA had also concluded that the existing data did not provide an adequate basis for quantitative risk assessment.[61] However, based on two more recent scientific studies,[62, 63] the IARC has reclassified DPM as Carcinogenic to Humans, placing it in Group 1.[64] This classification means that the IARC has determined that there is "sufficient evidence of carcinogenicity" of a substance in humans; it represents the strongest weight-of-evidence rating in the IARC's carcinogen classification scheme. USEPA, OEHHA, and IARC also recognize that exposure to DPM may cause non-cancer effects such as changes in lung function and airway inflammation.[65, 66, 67] DPM is a component of PM, and recent scientific data have linked prolonged exposure to PM to premature mortality, respiratory effects, and cardiovascular disease.

In 2003, BAAQMD estimated that the carcinogenic health risks from exposure to DPM in the Bay Area was about 500-in-1-million to 700-in-1-million.[68] More recently, as part of the effort to identify and update Community Air Risk Evaluation (CARE) communities, BAAQMD prepared projected emissions and health risk estimates for 2015, which showed resulting cancer risks in the San José CARE area of 200-in-1-million to 300-in-1-million,[69] with DPM contributing more than 85 percent of the total carcinogenic potential of emissions.

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[60] CARB, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. Stationary Source Division and Mobile Source Division. October.

[61] USEPA, 2002. Health Assessment Document for Diesel Engine Exhaust. National Center for Environmental Assessment, Office of Research and Development, Washington, DC. EPA/600/8-90/057F. May 2002.

[62] Silverman D.T., C.M. Samanic, J.H. Lubin, A.E. Blair, P.A. Stewart, R. Vermeulen, J.B. Coble, N. Rothman, P.L. Schleiff, W.D. Travis, R.G. Ziegler, S. Wacholder, M.D. Attfield, 2012. The Diesel Exhaust in Miners Study: A Nested Case-Control Study of Lung Cancer and Diesel Exhaust. J Natl Cancer Inst. October 21, 2012.

[63] Attfield, M.D., P.L. Schleiff, J.H. Lubin, A. Blair, P.A. Stewart, R. Vermeulen, J.B. Coble, and D.T. Silverman, 2011. The Diesel Exhaust in Miners Study: A Cohort Mortality Study With Emphasis on Lung Cancer. J Natl Cancer Inst. October 21, 2012.

[64] International Agency for Research on Cancer (IARC), 2012. Press Release No. 213. IARC: Diesel Engine Exhaust Carcinogenic. June 12, 2012.

[65] Office of Environmental Health Hazard Assessment (OEHHA), 1998. Findings of the Scientific Review Panel on The Report on Diesel Exhaust, as adopted at the Panel's April 22, 1998, meeting. April 22, 1998.

[66] OEHHA, 2002. Air Toxics Hot Spots Program Risk Assessment Guidelines: Part II Technical Support Document for Describing Available Cancer Potency Factors. California Environmental Protection Agency. December 2002.

[67] USEPA, 2011. Integrated Risk Information System (IRIS). Available at: http://www.epa.gov/iris/.

[68] BAAQMD, 2007. Toxic Air Contaminants 2003 Annual Report. August 2007.

[69] BAAQMD. 2014. Improving Air Quality and Health in Bay Area Communities. Community Air Risk Evaluation Program Retrospective & Path Forward (2004–2013). Available online at:

Diesel trucks and buses are sources of DPM emissions within the Bay Area. Specifically, Caltrans estimated that, in 2016, up to 10 percent of the vehicles on highways around the Airport were trucks with two or more axles.[70] Many of these trucks are diesel powered and thus contribute to DPM risks.

Based on available data, the other 10 TACs that pose the greatest risk from breathing ambient air in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, ethylbenzene, chloroform, formaldehyde, methylene chloride, and perchloroethylene.[71]

4.3.4.5 *Odors*

Odors are not generally regarded as a physical health risk. However, manifestations of a person's reaction to strong odors can range from irritation, anger, or anxiety to circulatory and respiratory system effects, nausea, vomiting, and headache.

The ability to detect odors varies considerably among the population. Some individuals are able to smell very minute quantities of specific substances; others may not have the same sensitivity, but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be acceptable to another (e.g., a fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and a transient odor is more likely to result in complaints than a constant one. This is caused by a phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant falls below a detection threshold, meaning it is not detectable by the average human.

Land uses that constitute odor sources include industrial facilities, such as asphalt batch plants, wastewater treatment facilities, and solid waste transfer facilities. Other examples of minor sources of odors include restaurants and auto body/paint shops. In general, odor dispersal occurs relatively quickly, with noticeable effects diminishing substantially with increasing distance from the source.

4.3.4.6 *Existing Emissions Associated with the Airport*

Operation of the Airport currently results in air emissions from a variety of sources, including aircraft, auxiliary power units (APUs), ground support equipment (GSE), airside equipment, on-road mobile sources including airport shuttle buses, stationary sources such as jet fuel tanks and boilers, and built

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http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CARE%20Program/Documents/CARE_Retrospective_April2014.ashx?la=en. Accessed: April 2019.

[70] California Department of Transportation (Caltrans). 2016. Annual Average Daily Truck Traffic on the California State Highway System. Available at: http://www.dot.ca.gov/trafficops/census/. Accessed: April 2019.

[71] CARB. 2009. The California Almanac of Emissions and Air Quality, Chapter 4: Air Basin Trends and Forecasts – Criteria Air Pollutants. Available at: https://www.arb.ca.gov/aqd/almanac/almanac09/chap409.htm. Accessed: April 2019.

environment attributes (e.g., parking garages, terminal buildings, and other airport facilities). Additionally, there are air emissions associated with architectural coating and consumer products used at the Airport. As part of the preparation of this EIR, these existing emissions were quantified and are shown in Table 4.3-4.

Table 4.3-4: Existing/Baseline Operational Criteria Pollutant Emissions at the Airport

	Average Daily (lbs/day)				Annual (tons/year)			
Source	**ROG**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**ROG**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Aircraft and GSE								
Aircraft	650	3,024	27	27	119	552	5.0	5.0
APU	7.1	96	12	12	1.3	17	2.2	2.2
GSE	34	106	5.0	4.8	6.3	19	0.92	0.87
Mobile								
Traffic	260	614	315	76	47	112	57	114
Shuttle Bus[1]	0.36	1.9	0.41	0.16	0.07	0.35	0.08	0.03
Airside Vehicles	1.1	3.0	0.18	0.16	0.20	0.55	0.03	0.03
Stationary								
Boilers	0.29	1.00	0.40	0.40	0.05	0.18	0.07	0.07
Misc. Natural Gas Use	0.03	0.50	0.04	0.04	0.00	0.09	0.01	0.01
Emergency Generators	4.2	7.9	0.17	0.17	0.76	1.4	0.03	0.03
Jet A Fuel Tanks	1.2	--	--	--	0.22	--	--	--
Avgas Fuel Tanks	0.19	--	--	--	0.04	--	--	--
Gasoline Dispensing Facility	0.09	--	--	--	0.02	--	--	--
Totals	**958**	**3,853**	**361**	**121**	**175**	**703**	**66**	**22**

PM_{10} and $PM_{2.5}$ data include exhaust and fugitive emissions from each source.

Emissions shown as zero may be non-zero values; however, they are below a meaningful reporting level for this analysis.

GSE = ground service equipment
APU = auxiliary power unit
ROG = reactive organic gases
NO_x = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter

Source: Ramboll US Corporation, 2019.

[1]Airport shuttle buses are expected to be converted from the CNG to electric buses in 2037, and therefore have no direct criteria air pollutant emissions in this year.

4.3.4.7 *Existing Emission Reduction Measures*

The Airport has implemented and currently implements a multitude of emission reduction measures, as summarized in Table 4.3-5, below. These measures would continue to be implemented under the proposed Master Plan Amendment.

Table 4.3-5: Existing Emission Reduction Measures at the Airport		
Measure	**Description**	**Status**
Category 1: Airside Operations		
Construct 2nd air carrier runway by extending Runway 12L/30R from 4,400' to 11,000'	Improves airfield efficiency, reducing delays, idling, and queuing	Runway extension completed in 2001
Install ground power units, battery recharge facilities, and preconditioned air units at all terminal gates	Facilitates airline conversion of GSE to electric power & phaseout of diesel APUs/GPUs	Installation completed in 2010; phaseout of diesel-GSE by Southwest Airlines is complete
Implement reduced/single-engine taxiing by aircraft	All airlines are encouraged to perform single or reduced engine taxiing to the extent determined safe and efficient	Commenced in 1998 and is ongoing
Category 2: Buildings and Facilities		
Adopt policy to purchase only alternate-fuel vehicles for airport operations & maintenance vehicle fleet	Reduces emissions associated with conventionally-powered vehicles.	Commenced in 2000 and is ongoing. Currently, 25% of the Airport's vehicle fleet is alternate fuel or clean energy- powered
Implement a Construction Project Pollutant Emissions Abatement Program	Requires measures be included in all construction plans/specs to minimize emissions from construction vehicles and equipment	Ongoing
Demolish & replace fuel storage & fuel dispensing facilities	Reduces emissions associated with older fuel storage & handling equipment, as well as fuel truck movement on Airport roadways	Fuel dispensing facility & Phase 1 storage facility completed in 2010; capacity of fuel storage to be increased when warranted
Construct jet fuel pipeline from regional distribution facility to the Airport fuel storage facility	Eliminates emissions associated with trucks transporting jet fuel to the Airport	Completed in 2011
Replace lighting at Airport facilities and in Airport buildings	Energy-efficient lighting reduces emissions associated with generation of electricity	Ongoing
Implement a green cleaning policy at the Airport	Use of green-seal-certified cleaning products reduces emissions and improves indoor air quality	Ongoing
Consolidate all rental car operations to a new facility to be built adjacent to Terminal B.	Significantly reduces emissions associated with rental car vehicle movements and shuttle bus service to/from existing facility	Completed in 2010

Table 4.3-5: Existing Emission Reduction Measures at the Airport		
Measure	**Description**	**Status**
Construct a 1-megawatt photovoltaic system on the roof of the new consolidated rental car facility	Generates zero-emissions electricity, providing 20% of the power used at the consolidated rental car facility	Completed in 2010
Implement San José Clean Energy Program at the Airport	Electricity purchased for Airport facilities will be 45% renewables & 80% carbon free	Initiated in Fall 2018
Construct new and upgraded terminal buildings to achieve Leadership in Energy and Environmental Design (LEED) standards	Reduces emissions from building heating & cooling, hot water heating, etc.; lower electricity use reduces offsite emissions	Construction of new North Concourse/Terminal B Phase 1 and upgraded Terminal A completed in 2010
Construct all buildings with an occupied space greater than 10,000 ft^2 to achieve LEED standards	Reduces emissions from building heating & cooling, hot water heating, etc.; lower electricity use reduces offsite emissions	Commenced in 2007 and ongoing
Category 3: Ground Transportation		
Provide free bus/rail passes to employees to allow unlimited use of VTA's bus & light rail transit (LRT) systems	Reduces emissions by encouraging transit use by all 3,500+ employees at SJC, including City, airline, rental car company, terminal concessionaire, and other Airport tenant employees	Commenced in 1998 and ongoing
Replace the Airport's diesel-powered shuttle bus fleet with CNG-powered buses	Reduces the Airport's total diesel exhaust emissions.	Completed in 2008 with purchase of 34 CNG-powered buses
Purchase electric-powered shuttle buses	Zero emission buses reduce Airport-generated emissions	Ten (10) buses delivered in February 2019
Upgrade on-Airport roadways and access, including new I-880/Coleman interchange, new SR 87/Skyport interchange, Airport Blvd. improvements at Coleman, Skyport, & Airport Pkwy entrances, and elimination of traffic signals	Lowers emissions and energy use from ground traffic by reducing congestion, delay, and queueing on roadways that serve the Airport	Completed in 2010
Provide free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station	Encourages transit use by all Airport users with buses running every 10-15 minutes from 5:30 a.m. to midnight daily	Commenced in 1998 and ongoing

Table 4.3-5: Existing Emission Reduction Measures at the Airport		
Measure	**Description**	**Status**
Construct on-Airport CNG Fueling Station	Facilitates use of CNG-powered, low emission, vehicles including Airport shuttle buses. Also open for public use.	Completed in 2003
Construct public electric vehicle (EV) charging stations	Reduces emissions by facilitating use of EVs	Initial station completed in 2001; additional stations in progress
Construct designated "cell phone waiting" public parking area	Reduces emissions by discouraging drivers picking up passengers from circling around the Airport	Completed in 2007; second cell phone waiting lot added in 2018
Require at least 25% of all taxi/van trips to/from the Airport to be by low- or zero- emission vehicles, to be facilitated by grants from Airport & VTA	Reduces emissions associated with conventionally-powered vehicles.	Commenced in 2005 and is ongoing. Currently, 36% of the taxi fleet is alternate/clean-fuel powered.
Implement a "Commercial Vehicle Trip Fee" to be charged for each trip to the Airport	Reduces emissions by eliminating unnecessary vehicle trips	Commenced in 1990s and is ongoing
Implement a taxi dispatch system that requires taxis to park in designated areas until dispatched	Reduces emissions associated with engine idling	Ongoing
Disseminate information on public transit systems in Airport terminals and on Airport website	Lowers emissions and energy consumption by encouraging transit usage	Ongoing

4.3.5 Discussion of Air Quality Impacts

For the purpose of determining the significance of the project's impacts on air quality, a significant impact would occur if the project would:

1) Conflict with or obstruct implementation of the applicable air quality plan
2) 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
3) Expose sensitive receptors to substantial pollutant concentrations
4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

As discussed in CEQA Guidelines Section 15064(b), the determination of whether a project may have a significant effect on the environment calls for careful judgment on the part of the Lead Agency and must be based to the extent possible on scientific and factual data. The City of San José has carefully

considered the thresholds updated by BAAQMD in May 2017 and regards these thresholds to be based on the best information available for the SFBAAB and conservative in terms of the assessment of health effects associated with TACs and $PM_{2.5}$. The BAAQMD CEQA Air Quality thresholds used in this analysis are identified below in Table 4.3-6.

Table 4.3-6: Thresholds of Significance Used in Air Quality Analyses

Pollutant	Construction	Operation	
	Average Daily Emissions (pounds)	**Average Daily Emissions (pounds)**	**Maximum Annual Emissions (tons)**
ROG, NO_x	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
Fugitive Dust (PM_{10}/$PM_{2.5}$)	Implement Best Management Practices	None	None
CO	None	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Risk and Hazards for New Sources and Receptors (Project)	Same as operational threshold	• Increased cancer risk of >10.0 in one million • Increased non-cancer risk of > 1.0 Hazard Index (chronic or acute) • Ambient $PM_{2.5}$ increase: > 0.3 μ/m^3 (Zone of influence: 1,000-foot radius from property line of source or receptor)	
Risk and Hazards for New Sources and Receptors (Cumulative)	Same as operational threshold	• Increased cancer risk of >100 in one million • Increased non-cancer risk of > 10.0 Hazard Index (chronic or acute) • Ambient $PM_{2.5}$ increase: > 0.8 μ/m^3 • (Zone of influence: 1,000-foot radius from property line of source or receptor)	
Odors	Same as operational threshold	• Result in five confirmed complaints to BAAQMD per year averaged over 3 years	

Sources: *BAAQMD CEQA Thresholds Options and Justification Report* (2009) and *BAAQMD CEQA Air Quality Guidelines* (May 2017).

ROG = Reactive Organic Gases
NO_x = Nitrogen Oxides
CO = Carbon Monoxide
ppm = parts per million
μ/m^3 = micrograms per cubic meter

4.3.5.1 *Conflicts with Air Quality Plans*

Impact AIR-1:	**The Project would conflict with or obstruct implementation of the applicable air quality plan. (Significant Unavoidable Impact)**

The most recently adopted air quality plan for the Bay Area is the 2017 Clean Air Plan (*Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area*),[72] which is an update to BAAQMD's 2010 Clean Air Plan. The 2017 Clean Air Plan serves as a multi-pollutant air quality plan to protect public health and the climate. The 2017 Clean Air Plan control strategy includes revised, updated, and new measures in the following control measure categories: stationary source measures, transportation measures, energy, buildings, agriculture, natural working lands, waste management, water, and super-GHGs (e.g., methane).

The BAAQMD CEQA Guidelines recommend that, where an air quality plan consistency determination is required, the Lead Agency consider the following three questions:

- Does the project support the primary goals of the air quality plan?
- Does the project include applicable control measures from the air quality plan?
- Does the project disrupt or hinder implementation of any clean air plan control measures?

With regard to the first question, the BAAQMD CEQA Guidelines state that the primary goals of the Clean Air Plan are to:

- Attain air quality standards;
- Reduce population exposure and protect public health in the Bay Area; and
- Reduce GHG emissions and protect the climate.

Any project that is inconsistent with these goals is not considered consistent with the 2017 Clean Air Plan. If emissions and health impacts associated with a project are below the BAAQMD CEQA thresholds of significance, then the project is considered to be consistent with the current Clean Air Plan.

Regarding the first question for consistency determination, even with implementation of feasible mitigation measures, the Project's construction mass emissions impacts are significant and unavoidable for NO_x, and operational mass emissions impacts are significant and unavoidable for NO_x and PM_{10} (refer to Section 4.3.5.2 on page 80 for a detailed discussion of these impacts). Regarding operational emissions, since the existing Airport facilities could accommodate the forecasted 2037 activity levels, the Project does not create the new aircraft or traffic related emissions since they would occur with or without the Project (refer to Section 3.0 for a detailed discussion of this matter). In other words, these are not entirely "new" emissions, since the Project does not itself create the additional demand for passenger air travel. The additional air travel demand is a result from the projected growth of jobs and housing in the region per the approved general plans of the cities and counties. Nevertheless, the

[72] BAAQMD. 2017. Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area, Final 2017 Clean Air Plan. Available online at: http://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed: April 2019.

emissions from aircraft activity and associated passenger travel to and from the Airport are indirectly associated with the Project and are conservatively evaluated in this EIR as impacts from the Project.

As to the second question, the Clean Air Plan includes 85 control measures to reduce emissions of PM, PM precursors, and other air pollutants from a wide variety of emissions sources. The control measures can be classified into eight main categories, as follows: (1) transportation; (2) energy; (3) buildings; (4) agriculture; (5) natural and working lands; (6) waste management; (7) water; and (8) super-GHGs. The Airport generally, and the Project specifically, advance the emission reduction objectives of various control measures presented in the Clean Air Plan, examples of which are provided below. Control measures discussed below include those that call for actions to be undertaken by BAAQMD and are not directly applicable at the project level. Nonetheless, the Project's consistency with the intent of those control measures is discussed for information purposes and in order to illustrate the complementary relationship between Airport operations and the Clean Air Plan.

- Energy EN1: Decarbonization of Electricity Production. The Airport procures its electricity through the San José Clean Energy Program, which is 80% carbon-free.
- Energy EN2: Decrease Energy Demand. Under the Project, all new facilities greater than 10,000 ft^2 in size will comply with LEED Silver standards.
- Buildings BL1 and BL2: Green Buildings and Decarbonize Buildings. Under the Project, all new facilities greater than 10,000 ft^2 in size will comply with LEED Silver standards.
- Stationary Source Control Measure SS36: PM from Trackout. Under the Project, construction best management practices will be implemented, which includes a requirement that all visible mud or dirt track-out onto adjacent public roads from construction activities be removed using wet power vacuum street sweepers at least once per day. Furthermore, the use of dry power sweeping will be prohibited.
- Transportation Control Measure TR5: Transit Efficiency and Use. The Airport promotes transit efficiency and use by providing all employees with free transit passes and by co-sponsoring free bus service between the Airport and the nearby Santa Clara CalTrain Station and Metro/Airport LRT Station.
- Transportation Control Measure TR17: Planes. The new and expanded facilities that are part of the Project are being designed to accommodate the latest and newest aircraft types, such aircraft that have lower emissions than older aircraft.
- Transportation Control Measure TR18: Goods Movement. Under the Project, cargo airline facilities and belly-freight facilities will be relocated and expanded. This would allow for more efficient handling and movement of cargo arriving and departing from the Airport. The facilities will also support the movement of goods between the Airport and nearby locations, as opposed to transporting goods to/from more distant airports such as San Francisco International or Oakland International.
- Transportation Control Measure TR19: Medium- and Heavy-Duty Trucks. In 2019, the Airport's fleet of 10 CNG-powered shuttle busses was replaced with an all-electric fleet, thereby eliminating criteria air pollutant emissions from this source.

As described above, the Project is consistent with Clean Air Plan measures, including mobile source measures, transportation control measures, and energy and climate measures. Therefore, the Project meets the second criterion for consistency with the Clean Air Plan.

The third question is whether the Project would disrupt or hinder implementation of any Clean Air Plan control measure. The Project would not affect any Clean Air Plan measures as described below.

- Of the stationary source measures, three potentially apply to the Project regarding stationary source permitting and the Air Toxics "Hot Spots" Program. Compliance with air permitting and potential Air Toxics "Hot Spots" Program requirements will ensure that the Project does not disrupt or hinder any Clean Air Plan control measures.
- Transportation control measures are strategies to reduce vehicles trips, vehicle use, VMT, vehicle idling, or traffic congestion. They also include measures to accelerate the replacement of older, dirtier vehicles and equipment largely through incentive programs. The Project would not disrupt or hinder any of these measures because the Airport implements, and will continue to implement, the measures listed in Table 4.3-5.
- Energy and climate measures are focused on decreasing electricity demand and decarbonizing electricity production. The Project would not disrupt or hinder any of these measures because the Airport includes a PV-electric system and it particupates in San José's Clean Energy Program.
- Building control measures are focused on implementing the CAL-Green (Title 24) statewide building energy code, decarbonizing buildings, and reducing urban heat island effects. The Project would not disrupt or hinder any of these measures because all new buildings greater than 10,000 ft^2 will meet LEED Silver requirements.
- The Project would not disrupt or hinder any agricultural activities as such land uses are not present at or near the Airport.
- Natural and Working Lands control measures focus on carbon sequestration in rangeland and wetlands and urban tree planting. The Project would not disrupt or hinder any of these measures as no wetlands will be affected and any tree to be removed will be replaced.
- Waste Management control measures focus on landfill emissions, composting, recycling, and waste reduction. The Project would not disrupt or hinder any of these measures because the Airport implements, and will continue to implement, an extensive recycling and waste diversion program (see Section 4.19, *Utilities & Service Systems*, for details).
- Water control measures focus on limiting emissions at treatment facilities and conserving water. The Project would not disrupt or hinder any of these measures because the Airport implements, and will continue to implement, water conservation measures that include the use of recycled water for the irragation of landscaping and the installation of low-water-use fixtures (see Section 4.19, *Utilities & Service Systems*, for details).
- Super-GHG control measures focus on reducing emissions of methane, black carbon, and fluorinated gases. The Project would not disrupt or hinder any of these measures as these substances are not commonly emitted in notable quantities by operations at the Airport.

As indicated, the Project does not disrupt or hinder any of the measures described above. Nonetheless, when compared to existing conditions, the Project would result in an increase in NO_x and PM_{10} emissions in excess of BAAQMD's CEQA significance thresholds, even with implementation of identified mitigation measures (refer to Section 4.3.3.2, below). Since the overall goal of the Clean Air Plan is a reduction in emissions of these pollutants, this increase in emissions would be inconsistent with Clean Air Plan, which would be a significant impact. **(Significant Unavoidable Impact)**

4.3.5.2 *Net Increase in Emissions of Criteria Air Pollutants*

Impact AIR-2:	**The Project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is non-attainment under an applicable federal or state ambient air quality standard. (Significant Unavoidable Impact)**

Project-Generated Construction Emissions

Project construction would generate criteria air pollutant emissions from heavy-duty construction equipment activity, architectural coating and asphalt paving off-gassing, truck haul trips, and construction workers and vendor truck trips to and from the project site. Mobile source emissions would be generated from on-road vehicles and construction equipment, including but not limited to dump trucks, excavators, bulldozers, compactors, forklifts, and cranes. Criteria air pollutant emissions would include emissions of NO_x, ROG, PM_{10}, and $PM_{2.5}$.

Methodology

The California Emissions Estimator Model (CalEEMod), developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California Air Districts, was used to quantify emissions from landside construction improvements (e.g., new parking garage, terminal expansion, and hotel). The Airport Construction Emissions Inventory Tool (ACEIT), developed by the Airport Cooperative Research Program of the Transportation Research Board, was used to calculate emissions from the construction of airside improvements (i.e., runway and taxiway).[73]

Emissions Estimate

The average daily criteria air pollutant emissions due to Project construction are summarized in Table 4.3-7. Average daily criteria air pollutant emissions are calculated following BAAQMD CEQA Guidelines. For each construction project, average daily emissions that would occur throughout the entire construction period are calculated based on the number of work-days for that period and added to emissions from other construction projects that are anticipated to overlap in the construction schedule. Table 3.3-1 of this EIR indicates which construction projects are assumed to occur in each of the two phases of the Project. In cases where the exact timing of construction projects is not known, construction emissions are assumed to occur in the first year of the Project's construction phase and emissions from any projects that could overlap are summed for the purposes of calculating total average daily emissions. This approach is conservative as it assumes all projects within a year occur simultaneously and contribute to daily emissions concurrently. Tables 3.1-2a and 3.1-2b in Appendix D shows the years in which individual construction projects were assumed to occur for the purposes of emissions modeling.

Total average daily ROG (i.e., VOC) emissions include emissions from mobile sources and off-gassing following BAAQMD CEQA Guidelines. BAAQMD CEQA thresholds of significance for PM_{10} and $PM_{2.5}$ apply to exhaust emissions from construction equipment only. PM_{10} and $PM_{2.5}$ emissions include exhaust emissions from on-road vehicles in addition to construction equipment to be conservative.

[73] For a more detailed discussion of CalEEMod and ACEIT, please refer to Appendix D.

Table 4.3-7: Construction Criteria Pollutant Emissions (lbs/day)								
Year	**NO_x**		**ROG**		**PM_{10}**		**$PM_{2.5}$**	
	Unmitigated (Mitigated)							
2020	**352**	**(120)**	49	(31)	14	(2.3)	13.0	(2.3)
2021	**108**	(46)	17	(11)	3.9	(0.45)	3.6	(0.43)
2022	**99**	(47)	15	(10)	3.1	(0.51)	2.9	(0.50)
2023	**105**	(50)	32	(27)	3.2	(0.45)	3.0	(0.44)
2024	53.7	(16)	37	(33)	2.1	(0.15)	1.9	(0.15)
2025	17	(5.6)	15	(14)	0.61	(0.05)	0.6	(0.05)
2026	15	(4.8)	7.1	(6.1)	0.53	(0.05)	0.5	(0.05)
2027	15	(4.8)	7.1	(6.1)	0.53	(0.05)	0.5	(0.05)
2028	51	(10)	11	(6.9)	2.5	(0.19)	2.4	(0.18)
2029	0	(0)	0	(0)	0	(0)	0.0	(0)
2030	0	(0)	0	(0)	0	(0)	0.0	(0)
2031	0	(0)	0	(0)	0	(0)	0.0	(0)
2032	0	(0)	0	(0)	0	(0)	0.0	(0)
2033	11	(5.2)	15	(14)	0.17	(0.05)	0.2	(0.05)
2034	11	(5.2)	15	(14)	0.17	(0.05)	0.2	(0.05)
2035	6.7	(3.4)	1.3	(0.5)	0.84	(0.03)	0.1	(0.03)
2036	6.7	(3.4)	1.3	(0.5)	0.84	(0.03)	0.1	(0.03)
2037	0	(0)	0	(0)	0	(0)	0.0	(0)
Significance Threshold	54		54		82		54	
Significant Impact?	**Yes**	**(Yes)**	No	(No)	No	(No)	No	(No)

Note: **Bold/Red** text indicates a significant impact.

Source: Ramboll US Corporation, 2019.

Unmitigated Project construction exceeds the BAAQMD CEQA threshold of significance for total average daily NO_x emissions in 2020-2023 and remains below the threshold for later years. Total average daily ROG, PM_{10} and $PM_{2.5}$ emissions are below their thresholds of significance for all years of construction. Thus, impacts from construction exhaust mass emissions are significant for NO_x.

Mitigation Measures: The Project shall implement the following mitigation measures to reduce construction emissions. To ensure implementation, these measures shall be included in all construction contracts and on project plans, as applicable

MM AIR-2.1: All off-road equipment greater than 25 horsepower used in construction projects at the Airport shall have engines that meet Tier 4 Final off-road emission standards. The City's Director of Planning, Building, and Code Enforcement (or his/her designee) may waive this requirement if presented with documentation that demonstrates that a particular piece of off-road equipment with an engine meeting Tier 4 Final emission standards is not regionally available.

MM AIR-2.2: Diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than two minutes, at any location, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment (e.g., traffic conditions, safe operating conditions). The contractor shall post legible and visible signs in English, Spanish, and Chinese, in designated queuing areas and at the construction site to remind operators of the 2-minute idling limit.

MM AIR-2.3: The contractor shall instruct construction workers and equipment operators on the maintenance and tuning of construction equipment and require that such workers and operators properly maintain and tune equipment in accordance with manufacturer specifications.

MM AIR-2.4: Before starting onsite ground disturbance, demolition, or construction activities, the contractor shall submit a Construction Emissions Minimization Plan to the City's Director of Planning, Building, and Code Enforcement (or his/her designee) for review and approval. The plan shall demonstrate how the contractor will meet the requirements of MM AIR-2.1. The plan shall include estimates of the construction timeline, with a description of each piece of off-road equipment required. The description may include, but is not limited to, equipment type, equipment manufacturer, engine model year, engine certification (Tier rating), horsepower, and expected fuel usage and hours of operation. For off-road equipment using alternative fuels, the description shall also specify the type of alternative fuel being used.

The Airport shall ensure that all applicable requirements of the Construction Emissions Minimization Plan have been incorporated into the contract specifications. The plan shall include a certification statement that the contractor agrees to comply fully with the plan.

The contractor shall make the Construction Emissions Minimization Plan available to the public for review onsite during working hours. The contractor shall post at the construction site a legible and visible sign summarizing the plan. The sign shall also state that the public may ask to inspect the plan for the project at any time during working hours and shall explain how to request to inspect the plan. The contractor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right-of-way.

Table 4.3-7 shows the result of applying MM AIR-2.1. The data in Table 4.3-7 show that the application of Tier 4 Final off-road engine emission standards will reduce construction-related NO_x emissions by between 49-80%. Mitigated daily average NO_x emissions from construction would be below significance thresholds for 2021 through 2023 but would still be significant in 2020. As a result, the Project would result in a significant unavoidable impact associated with construction NO_x emissions. **(Significant Unavoidable Impact)**

Operational Emissions of the Project

Operation of the Project would result in air emissions from a variety of sources, including aircraft, auxiliary power units (APUs), ground support equipment (GSE), airside equipment, on-road mobile sources including airport shuttle buses, stationary sources such as jet fuel tanks and boilers, and new built environment attributes (e.g., hotel, parking garages, expansion of terminal buildings and other airport facilities). Additionally, there are air emissions associated with architectural coating and consumer products used on the Airport property.

Methodology

The primary tool used to assist in quantifying operational criteria air pollutant emissions for the Airport was the Aviation Environmental Design Tool (AEDT). AEDT is a combined emissions and dispersion model for assessing air quality at civilian airports and military air bases.[74,75] The model was developed by the FAA in cooperation with the United States Air Force. The model is used to produce an inventory of emissions generated by sources on and around the airport, and to calculate pollutant concentrations in these environments.

A description of the Project's criteria air pollutant emissions sources and the methodology used to estimate their respective emissions are included below.

Aircraft: Aircraft operational emissions are based on project-specific projections of aircraft landings and takeoffs,[76] and modeled using AEDT. The aircraft data included 89 potential aircraft types. Given the length of this planning timeframe (i.e., through 2037), the projections assume that there will be some fleet turnover and introduction of newer and next generation aircraft, which are anticipated to be more fuel efficient and produce less emissions. Note that this analysis does not explicitly account for International Civil Aviation Organization (ICAO) and USEPA programs to reduce aircraft emissions. While it is expected that these will help reduce emissions, these programs are still being developed and details of implementation are not known yet. Therefore, the analysis conservatively does not quantify the benefits of these programs at this time.

Emissions were calculated based on AEDT default emission factors by aircraft type and AEDT default calculations for aircraft performance and times-in-mode (e.g., ground roll, takeoff, climbout, and approach). Stage length (a measure of how far the aircraft flies) is a required input for departing aircraft operations as it influences the weight of the aircraft at takeoff and affects takeoff and climbout performance (and, consequently, emissions produced from these operations). Assumptions on stage length are based on actual operations in 2018. Average taxi-in and -out times were obtained from the FAA's Aviation System Performance Metric database for actual operations at the Airport in 2018.

AEDT calculates aircraft emissions that occur between ground level and the atmospheric mixing height of 3,000 feet. The mixing height is the top of the vertical region of the atmosphere in which pollutant mixing occurs and affects ground level concentrations. Above this height, pollutants that are released

[74] FAA. Aviation Environmental Design Tool (AEDT). Available at: https://aedt.faa.gov/. Accessed: April 2019.

[75] AEDT replaced the FAA's Emissions and Dispersion Modeling System (EDMS) as of May 2015.

[76] The aircraft fleet mix is based on mapping for the Airport using forecasts from Mineta-San Jose International Airport Master Plan Demand Forecast Update Technical Report, HNTB Corporation, June 2, 2017 prepared for the FAA's 2017 RIM study.

generally do not mix with ground level emissions and do not affect ground level concentrations in the local area.

Auxiliary Power Units: Emissions from APUs were calculated utilizing AEDT default APU assignments (engine type/horsepower) by aircraft class. In addition, San José Airport-specific taxi time data for APU run time for each landing-takeoff was used. APUs were assumed to not operate while aircraft are at the gate due to gate power and preconditioned air provided to the aircraft while at the gates.

Ground Support Equipment: Emissions from GSE equipment, including air conditioners, air starts, aircraft tractors, baggage tractors, belt loaders, cabin service trucks, cargo loaders, catering trucks, forklifts, fuel trucks, hydrant trucks, lavatory trucks, service trucks and water service equipment, were calculated based on AEDT defaults for each aircraft class. AEDT defaults include fuel type, operating time, horsepower, and load factor. Information on actual GSE fuel types was used in order to estimate emission reductions from electrification for specific GSE types.[77]

Passenger and Worker Traffic: Emissions from traffic (including parking lot traffic) were calculated by utilizing trip generation rates and vehicle miles travelled for airport-related vehicle transportation, as determined by the traffic analysis completed for the Project (refer to Section 4.17 of this EIR). EMFAC2017 emission factors and average EMFAC2017 fleet mixes for each existing and Project scenario years (2018 and 2037) were utilized.

Airport Shuttle Buses: In the baseline year for this analysis (2018), the Airport operated 10 shuttle buses running on compressed natural gas (CNG) fuel. Calculations of shuttle bus emissions in the existing/baseline scenario are based on actual fuel usage and emission factors from EMFAC2017. In May 2019, the Airport electrified its shuttle bus fleet. As a result, shuttle buses would not result in criteria air pollutant emissions in the Project scenario (2037).

Airport-Owned Airside Equipment: Criteria air pollutant emissions from Airport owned and operated (non-GSE) off-road equipment were calculated by utilizing existing fuel consumption data for the Airport and scaling up for 2037 based on increased passenger levels. This equipment includes sweepers, mowers, runway closure markers and generators that are powered by diesel and gasoline fuels.

Boilers: The majority of natural gas consumption at the Airport occurs in three natural gas-fired boilers in the Central Plant. Two boilers are rated at 8.0 million British Thermal Units per hour (MMBtu/hour) and one boiler is rated at 5.2 MMBtu/hour. Natural gas usage at the Central Plant was based on utility readings for 2018. Fuel usage for 2037 was scaled by the change in annual passengers at the Airport.

Miscellaneous Natural Gas Combustion: A small portion of natural gas consumption occurs in miscellaneous sources at the Airport. These could include sources such as small furnaces, small water heaters, and kitchens. Natural gas usage for non-Central Plant uses was based on utility readings for 2018. Fuel usage for 2037 was scaled by the change in annual passengers at the Airport.

[77] Airlines provided an estimate of the fraction of equipment that was electric. A scaling factor was applied to emissions to reflect the updated electric equipment fraction. It was conservatively assumed that this fraction would not change over time.

Emergency Generators: There are 20 diesel-fired emergency generators and fire pumps in operation at the Airport. Operating hours and horsepower for each generator in 2018 was used for the emission calculations. Criteria air pollutant emissions were calculated based on a combination of manufacturer specifications, off-road equipment certification and USEPA's AP-42 database where specific data was not available.[78] No changes in emergency generator hours of operation are assumed for the Project.

Fuel Tank Emissions: Fugitive VOC emissions due to working and breathing losses from 11 existing jet fuel tanks at the Airport in 2018, and three additional jet fuel tanks in 2037, were calculated using USEPA AP-42 emission factors.[79] Fuel throughput in 2018 reflects actual fuel consumption at the Airport in 2018. The calculations assume an 85% control efficiency for fugitive VOC emissions based on CARB's areawide source methodologies.[80] Commercial jet fuel throughput for 2037 was scaled by the growth in annual passenger forecasts at the Airport, while general aviation jet fuel was scaled according to the number of flight activities.

Fugitive VOC emissions from aviation gasoline tanks was calculated based on aviation gasoline throughput at the Airport for 2018 and using emission factors from SCAQMD[81], CARB and CAPCOA guidance,[82,83,84] for loading, breathing, refueling, hose permeation and spillage. Fuel throughput for 2027 and 2037 was scaled based on the number of flight activities.

VOC emissions from the gasoline dispensing station were based on gasoline usage at the airport in 2018, and emission factors per the BAAQMD Permit Handbook,[85] assuming a 95% control efficiency based on a Phase II recovery system. Gasoline usage for 2037 was scaled based on the number of passengers forecasted for the Project year.

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[78] USEPA AP-42, Chapter 3, Section 3, Gasoline and Diesel Industrial Engines. Available at: https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors. Accessed: April 2019.

[79] USEPA AP-42, Chapter 7.1, Organic Liquid Storage Tanks. Available at: http://www.epa.gov/ttn/chief/ap42/ch07/final/c07s01.pdf Accessed: April 2019.

[80] CARB Area-wide source methodologies, Attachment H: Petroleum Marketing (methodology developed by Sonoma Technology, Inc. (STI) for the Central California Ozone Study (CCOS)). Available at https://www.arb.ca.gov/ei/areasrc/ccosmeth/att_h_petroleum_marketing.doc Accessed: April 2019.

[81] Wherever possible, BAAQMD-specific guidance was used in the analysis. However, methodologies from other air districts (e.g., SCAQMD) and sources were used in cases where BAAQMD does not provide analogous guidance, and there is no reason that different guidance would be needed in the Bay Area.

[82] SCAQMD Supplemental Instructions for Liquid Organic Storage Tanks (2017). Available at: http://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/supplemental-instructions-for-liquid-organic-storage-tanks.pdf Accessed April 2019.

[83] CARB Revised Emission Factors for Gasoline Marketing Operations at California Gasoline Dispensing Facilities. Available at: https://www.arb.ca.gov/vapor/gdf-emisfactor/gdf%20umbrella%20document%20-%2020%20nov%202013.pdf. Accessed: January 2019.

[84] CAPCOA Gasoline Service Station Risk Assessment Guidelines. Available at: https://www.arb.ca.gov/ab2588/rrap-iwra/GasIWRA.pdf. Accessed: January 2019.

[85] BAAQMD Permit Handbook Section 3.2 Gasoline Dispensing Facilities, available at: http://www.baaqmd.gov/~/media/files/engineering/permit-handbook/baaqmd-permit-handbook.pdf?la=en. Accessed: April 2019.

TACs from fugitive VOC emissions from for jet fuel and aviation gasoline storage tanks are calculated per SCAQMD guidance for liquid organic storage tanks,[86] while those from the gasoline dispensing facility followed BAAQMD guidance for gasoline dispensing facilities.[87]

Consumer Products: Consumer products are various solvents used in non-industrial applications, which emit VOCs during product use. These typically include cleaning supplies, kitchen aerosols, cosmetics, and toiletries. CalEEMod uses a default emission factor based on the total of all building square footage for both residential and non-residential buildings.[88] The default emission factor is based on the CARB Consumer Product Emission Inventory.

Architectural Coating: Operational architectural coatings account for the reapplication of paint and coatings on interior and exterior surfaces, which result in emissions of VOCs. Architectural coating VOCs were calculated for new facilities and parking lots that would be constructed by the Project. CalEEMod default parameters and equations were used to calculate VOC emission factors and annual emissions based on painted areas of non-residential buildings and parking lots.[89]

Operational Emissions from Hotel Land Use: Emissions associated with the proposed on-Airport hotel were calculated using CalEEMod defaults for that land use.

Emissions Estimate

For purposes of determining significant impacts, the incremental increase in emissions over existing/baseline conditions are calculated for the Project. Incremental emissions are calculated as the difference between the Project and existing/baseline (2018) conditions. Criteria air pollutant incremental operational emissions for the Project are summarized in Table 4.3-8 and compared relative to BAAQMD's daily and annual mass emission thresholds. Negative values in Table 4.3-8 indicate that emissions are lower than those in the existing/baseline conditions. Incremental emissions from GSE, traffic and airside vehicles are negative as a result of improved emission factors in future years. Fugitive ROG from aviation gasoline tanks is lower due to reduced avgas throughput for the Project. Incremental emissions from the Airport Shuttle Bus are negative because the Airport's Shuttle Buses are assumed to be and have been converted from CNG to electric vehicles.

Project operational emissions would be below the BAAQMD mass daily and annual significance threshold for ROG and $PM_{2.5}$ but would exceed the daily and annual significance thresholds for NO_x and PM_{10}. Thus, the Project would result in significant impacts with respect to operational emissions of NO_x and PM_{10}.

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[86] SCAQMD Supplemental Instructions for Liquid Organic Storage, Available at: http://www.aqmd.gov/docs/default-source/planning/annual-emission-reporting/supplemental-instructions-for-liquid-organic-storage-tanks.pdf. Accessed April 2019.

[87] BAAQMD Permit Handbook Section 3.2 Gasoline Dispensing Facilities, Available at: http://www.baaqmd.gov/~/media/files/engineering/permit-handbook/baaqmd-permit-handbook.pdf?la=en. Accessed: April 2019.

[88] CAPCOA. California Emissions Estimator Model®, User's Guide for CalEEMod® Version 2016.3.2., Section 4.5.2 Consumer Products. Available at: http://www.caleemod.com/. Accessed: April 2019.

[89] CAPCOA. California Emissions Estimator Model®, User's Guide for CalEEMod® Version 2016.3.2., Appendix A Section 6.3 Architectural Coatings. Available at: http://www.caleemod.com/. Accessed: April 2019.

Table 4.3-8: Projected Change in Operational Criteria Pollutant Emissions
(Project/2037 Conditions Compared to Baseline/2018 Conditions)

	Average Daily (lbs/day)				Annual (tons/year)			
Source	**ROG**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**	**ROG**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Aircraft and GSE								
Aircraft	8.9	5,606	16	16	1.6	1,023	3	3
APU	4.8	26	6	6	0.88	4.8	1.1	1.1
GSE	-2.9	-38	-0.25	-0.30	-0.52	-6.9	-0.05	-0.05
Mobile								
Traffic	-103	-278	147	27	-19	-51	27	4.8
Shuttle Bus[1]	-0.36	-1.9	-0.41	-0.16	-0.07	-0.35	-0.08	-0.03
Airside Vehicles	0.21	-0.91	-0.06	-0.06	0.04	-0.17	-0.01	-0.01
Stationary								
Boilers	0.15	0.52	0.21	0.21	0.03	0.10	0.04	0.04
Misc. Natural Gas Use	0.01	0.26	0.02	0.02	0	0.05	0	0
Emergency Generators[2]	0	0	0	0	0	0	0	0
Jet A Fuel Tanks	1.0	0	0	0	0.19	0	0	0
Avgas Fuel Tanks	-0.11	0	0	0	-0.02	0	0	0
Gasoline Dispensing Facility	0.05	0	0	0	0.01	0	0	0
New Land Use Type								
Hotel[3]	5.5	10	10	2.9	1	1.8	1.9	0.52
Area Source								
Consumer Products[4]	31	0	0	0	5.6	0	0	0
Arch. Coating[4]	5.7	0	0	0	1	0	0	0
Total Incremental Emissions	-49.4	**5,325**	**179**	52	-9	**972**	**33**	9.4
Significance Threshold	54	54	82	54	10	**10**	**15**	10
Significant Impact?	No	**Yes**	**Yes**	No	No	**Yes**	**Yes**	No

Notes:
[1] Airport shuttle buses are expected to be converted from CNG to electric buses in 2037, and therefore have no direct criteria air pollutant emissions in this year.
[2] Emergency generator emissions in 2037 are assumed to be the same as in 2018 as the operating hours are expected to stay the same.
[3] The hotel is assumed to be operational by 2027, following the construction schedule presented in the Amended Master Plan. Criteria air pollutant emission totals for the hotel include emissions from area, energy and mobile sources attributable to operation of the hotel.
[4] Consumer product and architectural coating VOCs are calculated from all new landside developments constructed in Phase 1 and Phase 2 of the Amended Master Plan.
Emissions shown as zero may be non-zero values, however, they are below a meaningful reporting level for this analysis.
Bold/Red text indicates a significant impact.

Source: Ramboll US Corporation, 2019.

Nitrogen Oxide (NO_x) Emissions

The vast majority of the Project's NO_x emissions result from aircraft operations and, as explained in Section 3.0, the City is not in a position as lead agency to directly influence the amount of aircraft activity at the Airport. In fact, the increase in NO_x emissions from aircraft operations is greater than the increase in NO_x emissions from the Project as a whole, meaning all other sources combined (that are within the City's control and would be reduced over the timeframe of Master Plan implementation) would result in a reduction in NO_x emissions compared to baseline conditions. Nevertheless, the NO_x emissions from aircraft activity are indirectly associated with the Project and are conservatively evaluated in this EIR as impacts from the Project.

As a result of the federal Airline Deregulation Act of 1978, which prohibits a state or local government's regulation of an air carrier's rates, routes, or services, the Airport cannot regulate the number of flights or the types of aircraft utilizing its facilities, as long as those flights and aircraft can be reasonably accommodated. The Airport, therefore, has no authority to mitigate air pollutant emissions associated with aircraft operations. For this reason, there is no feasible mitigation for the Project's significant NO_x emissions associated with aircraft. As a result, the Project would result in a significant unavoidable impact associated with operational NO_x emissions. **(Significant Unavoidable Impact)**

PM_{10} Emissions

The primary source of the Project's PM_{10} emissions is vehicle travel to and from the Airport (labeled as "Traffic" in Table 4.3-7). As described in Section 4.3.2.6 and shown in Table 4.3-5, the Airport currently implements a multitude of emissions reductions measures, including measures to reduce vehicle emissions to the extent feasible. Examples of existing measures intended to reduce vehicle emissions include:

- Employee Transportation: Since 1998, the Airport has provided free bus/rail passes to employees which allows unlimited use of VTA's bus and light rail transit systems. Encouraging the 3,500+ employees of the airport to use transit systems reduces emissions of commuting and traffic in the area.
- Ground Transportation: The Airport provides a free shuttle bus service connecting to the Metro LRT Station and Santa Clara CalTrain Station, operating every 10-15 minutes to promote public transportation as a means of travel.
- Cell Phone Lots: A second cell phone waiting lot was completed in 2018 to encourage drivers picking up passengers to wait in the designated lot rather than circle the Airport.
- Electric Charging Stations: Construction of the initial station completed in 2001, progressively developing additional public electric vehicle stations to facilitate the use of EVs by drivers.
- Low- or Zero- Emission Taxis: Facilitated by a grant from the Airport and VTA, there is a requirement that at least 25% of all taxi/van trips to or from the Airport are to be by low- or zero-emission vehicles. Currently, 36% of the taxi fleet is alternate or clean fuel powered vehicles.
- Commercial Vehicles: Implemented in the 1990s, a "Commercial Vehicle Trip Fee" which charges these types of vehicles for each trip they take to the Airport. This discourages unnecessary vehicles trips and endorses increased efficiency of each trip taken by the company.

- Taxi Dispatch: The Airport created a taxi dispatch system that requires taxis to park in designated areas until they are dispatched, which reduces engine idling and the emissions associated.
- Public Transport Education: Through the Airport's website and in the terminals, information on the public transit systems and information encourages usage of the transit systems which lowers emissions created by travelers.

Because the Airport already implements a comprehensive range of measures to reduce vehicle emissions, remaining measures that could be identified as mitigation for the proposed Project are limited. However, the two parking garages proposed by the Project present an opportunity to provide additional electric vehicle charging stations at the Airport.

Mitigation Measures: The Project will implement the following mitigation measure to reduce emissions associated with vehicle trips to and from the Airport:

MM AIR-2.5: A minimum of 10 percent of the total number of spaces provided in the proposed short- and long-term parking garages (Projects T-4 and T-8, respectively) will be designed and constructed for electric vehicle charging capability.

Implementation MM AIR-2.5 would incrementally reduce vehicle-related PM_{10} emissions, though not to a less than significant level. As a result, the Project would result in a significant unavoidable impact associated with operational PM_{10} emissions. **(Significant Unavoidable Impact)**

Health Effects Assessment for Criteria Pollutants

In a 2018 decision (*Sierra Club v. County of Fresno,* also referred to as *Friant Ranch*), the Supreme Court of California determined that CEQA requires that the potential for the project's emissions to affect human health in the air basin must be disclosed when a project's criteria air pollutant emissions would exceed applicable thresholds and contribute a considerably to a significant cumulative impact, "or [the EIR] must explain what the agency *does* know and why, given existing scientific constraints, it cannot translate potential health impacts further." (*Sierra Club v. County of Fresno* (2018) 6 Cal.5th 202, 521.)

As background, CEQA documents have long evaluated project-related health effects of toxic air contaminants, such as diesel particulate matter, through quantitative and/or qualitative means relative to air district-issued thresholds of significance. However, CEQA documents historically have not evaluated the specific health effects of project-related increases in criteria air pollutants, other than to note and summarize scientific literature regarding the general effect of those pollutants on health. Instead, in accordance with air district-issued thresholds of significance and industry standard practice at the time, CEQA analysis historically and traditionally focused on estimating project-related mass emissions totals for criteria air pollutants and, in certain cases, conducting dispersion modeling to assess impacts on local ambient air quality concentrations.

In light of *Sierra Club v. County of Fresno* decision, this EIR estimates the health effects of criteria air pollutants and their precursors. This evaluation is supplemental, in that it serves to describe the potential health effects of the criteria pollutant emissions already disclosed in the EIR. This evaluation

does not make a new significance determination, as the Project's criteria air pollutant emissions were already found to be significant and unavoidable.

Criteria air pollutant emissions from the Project are released into the regional air basin and mix with other emissions from a multitude of sources and are then transported by the predominant wind patterns to the South Bay. For aircraft operations, only emissions that occur between ground level and the atmospheric mixing height of 3,000 feet are included in this analysis because the mixing height represents the top of the vertical region of the atmosphere in which pollutant mixing occurs and affects ground level concentrations. Above this height, pollutants that are released generally do not mix with ground level emissions and do not affect ground level concentrations in the local area.

It should be noted that CEQA practitioners and other expert agencies (like air districts) are still developing tools and methodologies to provide the type of analysis described in the California Supreme Court's decision. This EIR presents one method that can be used to correlate project-related mass emissions totals for criteria air pollutants to estimated health-based consequences. In order to estimate the health impacts of the increases of criteria air pollutants for the Project, this EIR applied a photochemical grid model (PGM), Comprehensive Air Quality Model with extensions (CAMx), to estimate the small increases in concentrations of ozone and $PM_{2.5}$ in the region as a result of the emissions of criteria air pollutants and precursor pollutants from the Project. The EIR then applied a USEPA-authored program, the Benefits Mapping and Analysis Program (BenMAP)[90], to estimate the resulting health effects from the small increases in concentration. Health effects are compared against background level impacts in the Northern California Domain, as defined in Appendix D1. Only the effects of ozone and $PM_{2.5}$ are estimated, as those are the pollutants that USEPA uses in BenMAP to estimate the effect of emissions of NO_x, VOCs, and $PM_{2.5}$. Ozone and $PM_{2.5}$ have the most critical health effects and thus are the emissions evaluated to determine the Project's health effects.

As described previously, since the existing Airport facilities could accommodate the forecasted 2037 activity levels, the Project does not create the new aircraft or traffic related emissions since they would occur with or without the Project (refer to Section 3.0 for a detailed discussion of this matter). In other words, these are not entirely "new" emissions, since the Project does not itself create the additional demand for passenger air travel. The additional air travel demand is a result from the projected growth of jobs and housing in the region per the approved general plans of the cities and counties. Nevertheless, the emissions from aircraft activity and associated passenger travel to and from the Airport are indirectly associated with the Project and are conservatively evaluated in this EIR as impacts from the Project. Emissions from these two sources are the reason why the Project results in a significant unavoidable impact, necessitating an evaluation of Project's health effects associated with criteria air pollutant emissions per the 2018 *Sierra Club v. County of Fresno* ruling.

Assumptions for Health Effects Assessment

It is important to note there are a number of conservative assumptions built into this evaluation, beginning with the quantification of emissions themselves. These conservative assumptions include, but are not limited to, the following:

[90] USEPA, Benefits Mapping and Analysis Program, Available at: www.epa.gov/bencap.

- The aircraft emissions inventory does not quantify the benefits of various ICAO and USEPA programs to reduce aircraft emission, as they are still being developed by those entities and details of implementation are not known yet.
- Potential improvements to mobile-source emissions from mitigation measure MM AIR-2.5 are not quantified.
- Potential improvements to operational emissions resulting from implementation of ongoing emissions reduction measures listed in Table 4.3-5 are not quantified.
- Sources which showed emission reductions between the existing/baseline year (2018) and proposed Project year (2037) were not modeled;
- Assumption that health effects occur at any concentration, including small incremental concentrations; and
- Assumption that all $PM_{2.5}$ is of equal toxicity.

As such, results presented below are meant to represent an upper bound of potential health effects, and actual effects may be zero.

Uncertainty

The analysis of health effects associated with regional criteria air pollutants involves a high degree of uncertainty. The approach and methodology of this analysis ensures that the uncertainty is of a conservative nature. In addition to the conservative assumptions built into the emissions noted above, there are assumptions built into the application of BenMAP that may lead to an overestimate of health effects. For example, for all-cause mortality impacts from $PM_{2.5}$, these estimates are based on a single epidemiological study that found an association between $PM_{2.5}$ concentrations and mortality (see Appendix D for details). While similar studies suggest that such an association exists, there remains uncertainty regarding a clear causal link. This uncertainty stems from the limitations of epidemiological studies, such as inadequate exposure estimates and the inability to control for many factors that could explain the association between $PM_{2.5}$ and mortality such as lifestyle factors like smoking. Several reviews have evaluated the scientific evidence of health effects from specific particulate components (e.g., Rohr and Wyzga 2012; Lippmann and Chen, 2009; Kelly and Fussell, 2007). These reviews indicate that the evidence is strongest for combustion-derived components of PM including elemental carbon (EC), organic carbon (OC) and various metals (e.g., nickel and vanadium); however, there is still no definitive data that points to any particular component of PM as being more toxic than other components.

USEPA has also stated that results from various studies have shown the importance of considering particle size, composition, and particle source in determining the health impacts of PM. Further, USEPA found that studies have reported that particles from industrial sources and from coal combustion appear to be the most significant contributors to PM-related mortality, consistent with the findings by Rohr and Wyzga and others. This is particularly important to note here, as the majority of PM emissions generated from the Project are from entrained roadway dust, and not from combustion. Therefore, by not considering the relative toxicity of PM components, the results presented here are conservative.

Another uncertainty highlighted by USEPA which applies to potential health impacts from both $PM_{2.5}$ and ozone is the assumption of a log-linear response between exposure and health effects, without consideration for a threshold below which effects may not be measurable. The issue of a threshold for

$PM_{2.5}$ and ozone is highly debated and can have significant implications for health effects analyses as it requires consideration of current air pollution levels and calculating effects only for areas that exceed threshold levels. Without consideration of a threshold, effects of any change in air pollution below or above the threshold are assumed to result in a health effect. Although USEPA traditionally does not consider thresholds in its cost-benefit analyses, the NAAQS itself is a health-based threshold level that USEPA has developed based on evaluating the most current evidence of health effects.

As noted above, the health impacts estimation using this method presumes that effects seen at large concentration differences can be linearly scaled down to small increases in concentration, with no consideration of potential thresholds below which health effects may not occur. This methodology of linearly scaling impacts is broadly accepted for use in regulatory evaluations and is considered as being health protective. In summary, health effects presented in this report are conservatively estimated, and the actual effects may be zero.

$PM_{2.5}$ Health Effects

The results of the health effects assessment for $PM_{2.5}$ are shown in Table 4.3-9.

Table 4.3-9: BenMAP-Estimated Mean $PM_{2.5}$ Health Effects of Project Emissions Across the Northern California Domain[1]

Health Endpoint[2]	Incidences (Mean)	Percent of Background Health Incidence (%)
Emergency Room Visits, Asthma [0-99]	1.89	0.0016 %
Mortality, All Cause [30-99]	4.46	0.0017 %
Hospital Admissions, Asthma [0-64]	0.15	0.0011 %
Hospital Admissions, All Cardiovascular (less Myocardial Infarctions) [65-99]	0.41	0.00027 %
Hospital Admissions, All Respiratory [65-99]	0.80	0.00060 %
Acute Myocardial Infarction, Nonfatal [18-24]	0.00022	0.00077 %
Acute Myocardial Infarction, Nonfatal [25-44]	0.012	0.00078 %
Acute Myocardial Infarction, Nonfatal [45-54]	0.030	0.00071 %
Acute Myocardial Infarction, Nonfatal [55-64]	0.058	0.00083 %
Acute Myocardial Infarction, Nonfatal [65-99]	0.21	0.00072 %

[1] Health effects are shown in terms of incidences of each health endpoint and how it compares to the base (2037 base year health effect incidences) values.
[2] Affected age ranges are shown in square brackets.

Source: Ramboll US Corporation, 2019.

The results show that the highest effect is for all-cause mortality, with an estimated mean increased incidence of 4.46 deaths per year due to worst-case Project emission levels in the 2037 buildout year.

Smaller mean increased incidences per year were estimated for other relevant $PM_{2.5}$-related health outcomes: 1.89 increase in incidence of asthma related emergency room visits, 0.80 increase in incidence of respiratory hospital admissions, and 0.41 increase in incidence of cardiovascular hospital admissions.

It should be noted, however, that the estimated increased incidence in those health effects are quite minor compared to the background health incidence values (shown in Table 4.3-9 as percent of Background Health Incidence). For example, for mortality, the increase of 4.46 deaths per year due to Project emissions represents 0.0017% of the total all-cause mortality for people ages 30 to 99.

It is also important to note the uncertainty and conservative nature of the results presented, particularly for all-cause mortality. These estimates are based on a single epidemiological study that found an association between $PM_{2.5}$ concentrations and mortality. While similar studies suggest that such an association exists, there remains uncertainty regarding a clear causal link. This uncertainty stems from the limitations of epidemiological studies, such as inadequate exposure estimates and the inability to control for many factors that could explain the association between $PM_{2.5}$ and mortality such as lifestyle factors like smoking. In addition, the components of PM that may be associated with adverse health effects are yet unknown, but the analysis assumes that all PM is equally toxic, making it very conservative.

Ozone Health Effects

The results of the health effects assessment for ozone are shown in Table 4.3-10.

Table 4.3-10: BenMAP-Estimated Mean Ozone Health Effects of Project Emissions Across the Northern California Domain[1]

Health Endpoint[2]	Incidences (Mean)	Percent of Background Health Incidence (%)
Hospital Admissions, All Respiratory [65-99]	2.07	0.0016 %
Mortality, Non-Accidental [0-99]	1.11	0.00062 %
Emergency Room Visits, Asthma [0-17]	11.05	0.028 %
Emergency Room Visits, Asthma [18-99]	14.59	0.019 %

[1] Health effects are shown in terms of incidences of each health endpoint and how it compares to the base (2037 base year health effect incidences) values.
[2] Affected age ranges are shown in square brackets.

Source: Ramboll US Corporation, 2019.

For the Project, asthma-related emergency room visits are associated with the highest health effects due to the Project emissions in the Northern California domain (14.59 incidences per year for adults ages 18 to 99 and 11.05 incidences per year for children ages 0 to 17). Hospital admissions due to respiratory issues for adults age 65-99 and non-accidental mortality have lower incidence increases (2.07 and 1.11 incidences per year, respectively).

It should be noted, however, that the estimated increases in those ozone-related health effect incidences are quite minor compared to the background health incidence (shown in Table 4.3-10 as percent of Background Health Incidence). For example, the increase in asthma emergency room visits represents 0.028% of the total asthma-related emergency room visits for children.

Conclusion

The $PM_{2.5}$ and ozone concentration changes modeled by CAMx were converted to effects on various health endpoints including premature mortality, hospitalizations, and emergency room visits, using the BenMAP model and USEPA defaults for health endpoints. Estimated changes in the health effect incidences are compared to background levels in the Northern California domain, as defined in Appendix D1. For the $PM_{2.5}$-related health endpoints, the health effect on mortality is the highest (Incidence = 4.46). For ozone-related health endpoints, asthma-related emergency room visits are most affected (Incidence = 14.59 for adults ages 18 to 99 and Incidence = 11.05 for children ages 0 to 17). Other health effect incidences are lower. Across the board, the estimated increases in those health effect incidences are quite minor compared to the background health incidence values with the largest $PM_{2.5}$ health effect (all-cause mortality) representing only 0.0017% of the total of all deaths, and the largest effect for ozone (asthma related emergency room visits by adults) representing 0.019% of all emergency room visits.

Overall, the estimated health effects from the Project are low relative to existing health risks and represent only a very small fraction of the total background health incidence. Nonetheless, as disclosed above, the future criteria air pollutants emissions from the growth in aircraft activity at the Airport represent a significant and unavoidable impact to regional air quality.

4.3.5.3 *Exposure of Sensitive Receptors to Substantial Pollutant Concentrations*

Impact AIR-3:	**The Project would not expose sensitive receptors to substantial pollutant concentrations. (Less Than Significant Impact)**

Health Risk Assessment

A Health Risk Assessment (HRA) was completed to determine whether the Project would expose sensitive receptors to substantial pollutant concentrations during construction or operation. The HRA was conducted in accordance with CARB's Air Toxics Hot Spots Program Risk Assessment Guidelines and is consistent with risk assessment guidance documents issued by Cal/EPA's OEHHA and BAAQMD.

An HRA is a different analysis than the analysis of health effects resulting from criteria air pollutant emissions discussed in Section 4.3.3.2. The criteria air pollutant health effects analysis evaluated the health effects of project criteria air pollutant emissions at a regional level. In contrast, the HRA is a more localized analysis which evaluates the health risks resulting from exposure of sensitive receptors near the Airport to TACs from the Project and other nearby sources.

Sensitive receptors refer to those segments of the population most susceptible to impacts from air pollution emissions (e.g., children, the elderly, and people with pre-existing serious health problems affected by air quality). For this analysis, sensitive receptors that could be affected by the operation of

the Airport include all identified residential communities, public and private K-12 schools, public and private day care centers, convalescent homes and elderly residential facilities, overnight hospitals, and long-term care facilities within 1,000 meters of the Airport. Residential communities that could be affected by the operation of the Airport include residents of San José whose homes are within 1,000 meters of the Airport. Discrete sensitive receptors other than residential communities within 1,000 meters of the Airport include six daycare facilities and two schools. The locations of all modeled receptors are illustrated on Figure 4.3-1.

The American Meteorological Society/USEPA Regulatory Model Improvement Committee Model (AERMOD) was used to evaluate the air dispersion of pollutants from the Airport in order to evaluate concentrations of TACs and $PM_{2.5}$ for evaluation against health risk thresholds. Sources of TACs from the proposed Project include fuel combustion associated with aircraft, vehicles, and construction equipment, as well as TACs released from fuel storage tanks. TAC modeled concentrations were used to calculate cancer risk, chronic hazard index (HI) and $PM_{2.5}$ concentrations at each sensitive receptor as well as acute HI at all receptors. Additionally, cancer risk, chronic HI and $PM_{2.5}$ concentrations from nearby non-airport related activities (e.g., stationary sources, highways/freeways, other construction activities) are added to Project impacts and evaluated against BAAQMD's cumulative impact thresholds.

Construction Health Risk Assessment

The health risks resulting from the Project's construction activities are detailed in Table 4.3-11.

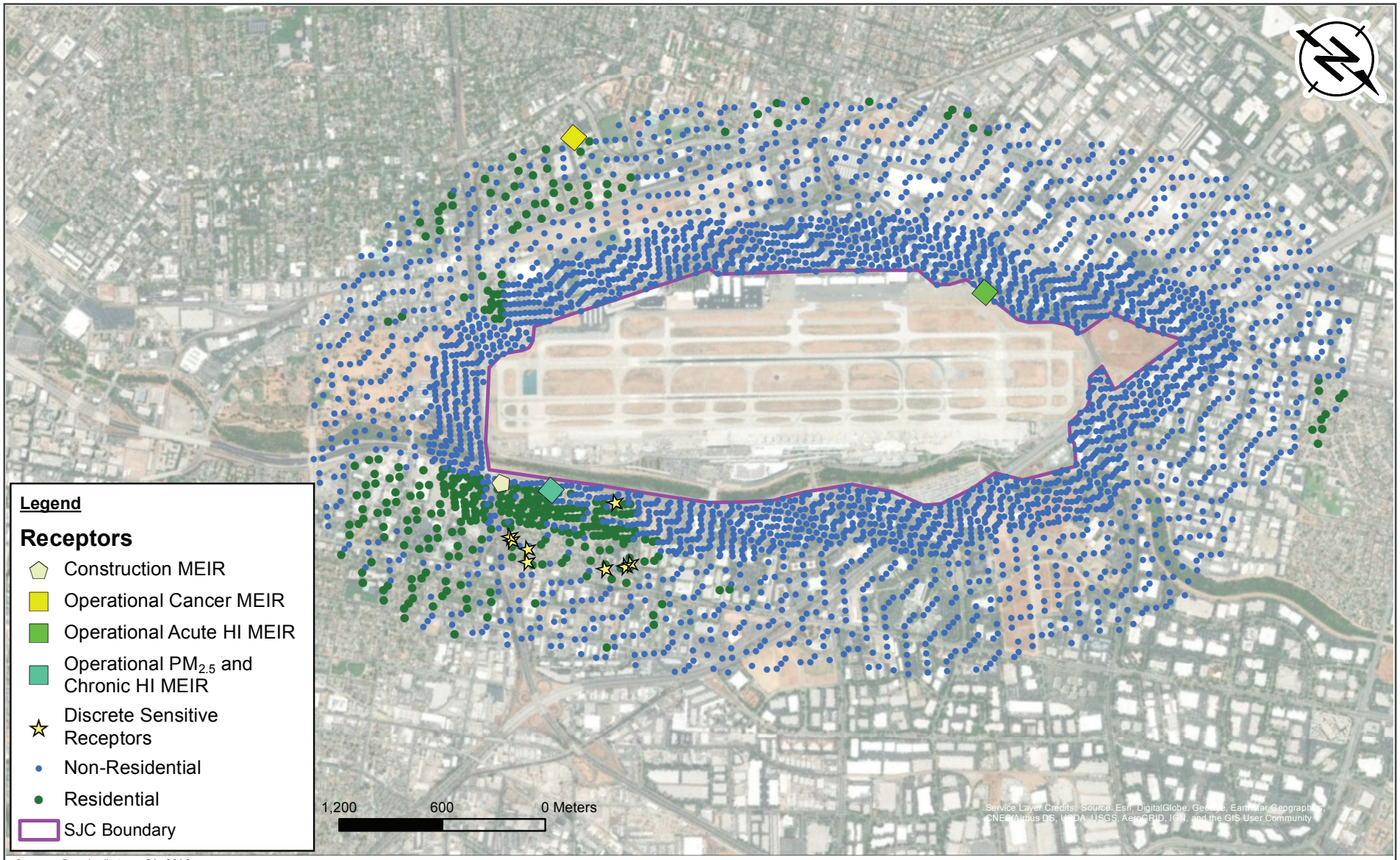
Table 4.3-11: Construction Health Risk Assessment Summary

Health Endpoint[1]	**Cancer Risk (in 1 million)**	**Chronic Non-Cancer Hazard Index**	**Maximum Annual $PM_{2.5}$ Concentration[3] ($\mu g/m^3$)**
Maximum Impacts from Construction[2]	5.7	0.0064	0.032
Significance Threshold	>10	>1.0	0.3
Significant Impact?	No	No	No

[1] Health endpoints are evaluated at all sensitive receptors, including residential, daycare, and school receptors.
[2] Construction activities from the Project would result in impacts equal to or lower than the maximum value shown in this table at all receptors.
[3] The maximum annual $PM_{2.5}$ concentration occurs in 2021.

Source: Ramboll US Corporation, 2019.

The maximum incremental cancer risk from the Project's construction activities is calculated at less than six in a million, which would not exceed the BAAQMD significance threshold. Construction activities would also result in a chronic non-cancer hazard index that is below the BAAQMD threshold. The maximum concentration of $PM_{2.5}$ associated with the construction of the Project is 0.03 $\mu g/m^3$, which is below the BAAQMD significance threshold. Thus, health risk impacts associated with construction activity due to the Project are less than significant.



Source: Ramboll, Aug. 21, 2019.

HEALTH RISK ASSESSMENT MODELED RECEPTORS

FIGURE 4.3-1

As indicated in Section 4.3.3.2, implementation of Mitigation Measure MM AIR-2.1 would result in reduction of construction emissions. Specifically, DPM would be reduced by 49-80% depending on the year of construction, and the health risk results due to mitigated construction emissions would be even lower than those reported in Table 4.3-11. Therefore, health risk impacts associated with mitigated construction activity due to the Project would also be less than significant. **(Less Than Significant Impact)**

Operational Health Risk Assessment

The health risks resulting from the Project's operational activities are detailed in Table 4.3-12. Incremental cancer risks, chronic non-cancer hazards and acute non-cancer hazards are below BAAQMD's significance thresholds. The maximum incremental concentration of $PM_{2.5}$ associated with the operation of the Project is 0.15 µg/m^3, which also is below the BAAQMD significance threshold. Thus, health risk impacts associated with operational activity due to the Project are less than significant.

Table 4.3-12: Operational Health Risk Assessment Summary

Health Endpoint[1]	Cancer Risk (in 1 million)	Chronic Non-Cancer Hazard Index	Acute Non-Cancer Hazard Index	Maximum Annual $PM_{2.5}$ Concentration[3] (µg/m^3)
Maximum Incremental Impact (2037)[2]	-0.65	0.033	0.28	0.15
Significance Threshold	>10	>1.0	>1.0	0.3
Significant Impact?	No	No	No	No

[1] Health endpoints are evaluated at all sensitive receptors, including residential, daycare and school receptors.
[2] Maximum incremental impacts are calculated as the maximum value of the difference between Project (2037) impacts and existing/baseline (2018) impacts, evaluated over all receptors. The Project would result in impacts equal to or lower than the maximum incremental value shown in this table at all receptors. A negative value indicates that the health risk is lower in 2037 as compared to the 2018 baseline.

Source: Ramboll US Corporation, 2019.

Cancer risk under the proposed Project scenario was calculated as the incremental risk between existing/baseline operations (2018) versus Project operations (2037). Emissions that drive health risks (notably, DPM) decrease between the two scenarios due to improvements in emission factors over time. Therefore, cancer risk associated with Project emissions in 2037 are below risks associated with the existing/baseline emissions from 2018. **(Less Than Significant Impact)**

Construction Dust Emissions

Construction activities from the proposed Project would generate dust that could affect local and regional air quality. The dry, windy climate of the area during the summer months creates a high potential for dust generation when and if underlying soils are exposed. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils.

The following measures for controlling dust and pollutant emissions would be implemented as Standard Conditions during construction to reduce dust and other particulate matter in the area:

Standard Conditions

During any construction period ground disturbance, the Airport shall ensure that the project contractor implement measures to control dust and exhaust. The contractor shall implement the following best management practices that are required of all projects:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- 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). Clear signage shall be provided for construction workers at all access points.
- 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.
- Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. 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.

With implementation of the standard conditions, the Project would result in a less than significant impacts related to construction dust. **(Less Than Significant Impact)**

Carbon Monoxide Analysis

CO concentration is a direct function of motor vehicle activity (particularly during peak commuting hours) and meteorological conditions. Under specific meteorological conditions combined with high motor vehicle activity, CO concentrations may reach unhealthy levels for local sensitive land uses, such as residential areas, schools, preschools, playgrounds, and hospitals. As a result, BAAQMD recommends analysis of CO emissions at a local rather than a regional level.

As part of its CEQA Air Quality Guidelines,[91] BAAQMD provides a screening methodology based on peak hourly traffic volumes to evaluate potential impacts of CO emissions from mobile sources. The screening methodology focuses on intersections with vehicle traffic exceeding 44,000 vehicles per

[91] BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed: April 2019.

hour after Project buildout (or 24,000 vehicles per hour in locations with limited vertical or horizontal air mixing) that could violate or contribute to a violation of ambient air quality standards for CO. Based on the estimated Project-related traffic and existing traffic in the area, it is not expected that any of the intersections near the Project would experience more than 24,000 vehicles per hour at full buildout. Thus, the Project is not expected to contribute to a violation of CO air quality standards, and therefore does not exceed the BAAQMD CO significance threshold. Thus, CO impacts from the Project are less than significant. **(Less Than Significant Impact)**

4.3.5.4 *Impacts due to Other Emissions*

Impact AIR-4:	**The Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. (Less Than Significant Impact)**

The occurrence and severity of potential odor impacts depends on numerous factors, such as the nature, frequency, and intensity of the source, the wind speeds and direction, and the sensitivity of the receiving location each contribute to the intensity of the impact. While offensive odors rarely cause any physical harm, they can be unpleasant, cause distress among the public, and generate citizen complaints.

The BAAQMD CEQA Guidelines specifically identify wastewater treatment plants, oil refineries, asphalt plants, chemical manufacturing, painting/coating operations, coffee roasters, food processing facilities, recycling operations, and metal smelters as operational odor sources of particular concern. For such uses, BAAQMD recommends a buffer zone of one to two miles to avoid potential odor conflicts. The Project does not include any of these odor-producing sources. The BAAQMD CEQA Guidelines have a threshold of significance for operational-related odors of five confirmed complaints per year averaged over three years. The Airport has not received any odor complaints in the last three years.

The Project is not expected to generate any meaningful sources of odor. And, given the characteristics of the Airport's operations, and the BAAQMD rules and regulations (e.g., Regulation 2 requiring permits and Regulation 1 Rule 301 nuisance rule), it is anticipated that there will not be any odor issues related to the Project. Thus, impacts from odors under Project conditions would be less than significant. **(Less Than Significant Impact)**

4.3.5.5 *Cumulative Impacts*

Impact AIR-C:	**The Project would result in a cumulatively considerable contribution to a significant air quality impact. (Significant Unavoidable Impact)**

By its very nature, air pollution has largely a cumulative impact. The geographic area for cumulative air quality impacts is the San Francisco Bay Area Air Basin. Past, present, and future development projects contribute to the region's adverse air quality impacts. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts.

Cumulative Emissions of Criteria Pollutants

In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Since the Project exceeds BAAQMD thresholds for criteria air pollutant emissions during both construction and operation, even with implementation of feasible mitigation measures, the Project would have a significant and unavoidable cumulative impact related to criteria air pollutant emissions. **(Significant Unavoidable Cumulative Impact)**

Cumulative Health Risk Assessment

Cumulative Construction Scenario

The cumulative construction scenario considers impacts from the construction of all Master Plan projects as well as emissions from projected non-airport regional growth (i.e., nearby construction projects). The cumulative impact of other construction activities on health risk was evaluated at the construction maximally exposed individual sensitive receptor (MEISR). Impacts of other construction activities are first screened out based on distance. Per the BAAQMD CEQA Guidelines,[92] a radius of 1,000 feet around the project property boundary should be used for assessing cumulative impacts. Any construction activities that are not screened out based on distance are modeled and then evaluated for additional health risk impacts to the MEISR. There are no other known projects currently under construction or approved within 1,000 feet of the construction MEISR, so there is no contribution to nearby construction projects in the construction cumulative analysis.[93]

Cancer risks, noncancer hazards, and $PM_{2.5}$ concentration from the cumulative construction scenario would, therefore, be the same as the Project construction scenario and would not exceed BAAQMD significance thresholds.

Cumulative Operational Scenario

The cumulative operational scenario evaluates health risk impacts associated with Airport operations in year 2037 along with emissions from projected non-airport regional growth. Stationary sources, roadways sources and roadways within the 1,000-foot zone of influence were included in the assessment. Stationary sources were identified using the BAAQMD Stationary Source Screening Analysis Tool and additional information requested from BAAQMD on these sources.[94] BAAQMD-provided tools were used to estimate impacts from the nearby stationary sources on the operational MEISR. Impacts from total roadway traffic were analyzed using the BAAQMD Roadway Screening

[92] BAAQMD. 2017. California Environmental Quality Act Air Quality Guidelines. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed: April 2019.

[93] City of San Jose Planning Department. Development Activity Highlights & Five-Year Forecast. February 2019. Available at: http://www.sanjoseca.gov/DocumentCenter/View/83502. Accessed: May 2019.

[94] BAAQMD. 2012. Stationary Source Screening Analysis Tool. Available at: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools, Accessed: April 2019.

Analysis Calculator and the BAAQMD Highway Screening Analysis Tool.[95,96] The reuslts of the cumulative operational analysis are shown in Table 4.3-13.

Table 4.3-13: Cumulative Operational Health Risk Assessment

Source	Cancer Risk (in a million)	Chronic Hazard Index	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Project Operation	-0.65	0.03	0.15
Nearby Stationary Sources	--	--	--
Nearby Major Streets	3.4	--	0.03
Nearby Highways/Freeways	21	--	1.8
Nearby Railways	14	--	0.02
Total	38	--	**2.0**
Threshold	100	0.03	0.80
Significant?	No	10	**Yes**

Note: **Bold/Red** text indicates a significant impact.

Source: Ramboll US Corporation, 2019.

While cumulative cancer risks and chronic noncancer hazards associated with the Project would not exceed BAAQMD significance thresholds, the maximum cumulative concentration of $PM_{2.5}$ is 2.0 $\mu g/m^3$ and is above the BAAQMD significance threshold of 0.8 $\mu g/m^3$. This exceedance is almost entirely due to the contribution from the nearby highways (1.8 $\mu g/m^3$), with the Project's contribution being 0.15 $\mu g/m^3$ (or 7.5%). While the cumulative $PM_{2.5}$ concentration is above BAAQMD's cumulative significance threshold, the Project's contribution of 7.5% of the impact is not cumulatively considerable.

Cumulative Construction Plus Operational Scenario

As described above, cumulative impacts from construction and operation of the proposed Project were evaluated separately. As a conservative measure, worst-case exposure parameters were used for each of the construction and operation health risk assessment scenarios.

To evaluate potential cumulative impacts for a receptor that may be exposed to both construction and operational emissions, this analysis assumes that cumulative construction and cumulative operational risks at the MEISR are additive.[97] The results are shown in Table 4.3-14.

[95] BAAQMD. 2015. Roadway Screening Analysis Calculator. Available at: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools. Accessed: April 2019.

[96] BAAQMD, 2011. Highway Screening Analysis Tool. Available at: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools. Accessed: April 2019.

[97] Construction and operational health risks presented not in reality additive, since the MEI receptor locations for the two scenarios are in different locations. Furthermore, the combined exposure duration for the construction and operation scenarios add to approximately 48 years which is much longer than the default exposure duration of 30 years for resident from OEHHA. This methodology, therefore, represents a conservative scenario.

Table 4.3-14: Cumulative Construction Plus Operational Health Risk Assessment			
Source	**Cancer Risk (in a million)**	**Chronic Hazard Index**	**$PM_{2.5}$ Concentration ($\mu g/m^3$)**
Project Construction	5.7	0.01	0.03
Project Operation	0	0.03	0.15
Nearby Stationary Sources	2.9	--	--
Nearby Major Streets	1.3	--	0.03
Nearby Highways/Freeways	52	--	1.8
Nearby Railways	12	--	0.02
Total	73	--	**2.03**
Threshold	100	0.04	0.80
Significant?	No	10	**Yes**

Note: **Bold/Red** text indicates a significant impact.

Source: Ramboll US Corporation, 2019.

Similar to the cumulative operational scenario, the construction plus operational cumulative health risk will also be less than the significance thresholds for both cumulative cancer risk and chronic hazard index, while the annual average $PM_{2.5}$ concentration of 2.03 $\mu g/m^3$ would be higher than the cumulative significance threshold of 0.8 $\mu g/m^3$, primarily due to the contribution from nearby highways and freeways. The Project's combined construction and operation would contribute 0.18 $\mu g/m^3$ (or 8.9%). While the cumulative $PM_{2.5}$ concentration is above the BAAQMD's cumulative significance threshold, the Project's contribution of 8.9% of the impact is not cumulatively considerable. **(Less Than Significant Cumulative Impact)**

4.4 BIOLOGICAL RESOURCES

The following discussion is based primarily on a Biological Resources Report prepared by *H.T. Harvey & Associates* in September 2019. The report is attached as Appendix E to this EIR.

4.4.1 Environmental Setting

4.4.1.1 *Regulatory Framework*

Federal and State

Special-Status Species

Individual plant and animal species listed as rare, threatened or endangered under state and federal Endangered Species Acts are considered "special-status species." Federal and state "endangered species" legislation has provided the United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Permits may be required from both the USFWS and CDFW if activities associated with a proposed project would result in the take of a species listed as threatened or endangered. To "take" a listed species, as defined by the State of California, is "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" said species. "Take" is more broadly defined by the federal Endangered Species Act to include "harm" of a listed species.

In addition to species listed under state and federal Endangered Species Acts, Section 15380(b) and (c) of the CEQA Guidelines provide that all potential rare or sensitive species, or habitats capable of supporting rare species, must be considered for environmental review. These may include plant species of concern in California listed by the California Native Plant Society and CDFW as "Species of Special Concern."

Migratory Bird and Birds of Prey Protections

Federal and state laws also protect most bird species. The federal Migratory Bird Treaty Act (MBTA) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

Birds of prey, such as owls and hawks, are protected in California under provisions of the State Fish and Game Code. The code states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by CDFW.

Sensitive Habitats

Wetland and riparian habitats are considered sensitive habitats under CEQA. They are also afforded protection under applicable federal, state, and local regulations, and are generally subject to regulation, protection, or consideration by the US Army Corps of Engineers, Regional Water Quality Control Board, CDFW, and/or USFWS under provisions of the federal Clean Water Act and State of California Porter-Cologne Water Quality Control Act. US Environmental Protection Agency (USEPA) regulations, called for under Section 402 of the Clean Water Act, also include the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge into waters of the United States (e.g., streams, lakes, bays, etc.).

Regional

Santa Clara Valley Habitat Plan/Natural Community Conservation Plan

The Santa Clara Valley Habitat Plan/Natural Community Conservation Plan (Habitat Plan) covers an area of 519,506 acres, or approximately 62% of Santa Clara County. It was developed and adopted through a partnership between Santa Clara County, the Cities of San José, Morgan Hill, and Gilroy, Valley Water, Santa Clara Valley Transportation Authority (VTA), USFWS, and CDFW. The Plan, which is administered by the Santa Clara Valley Habitat Agency, is intended to promote the recovery of various special status species, including the burrowing owl, and enhance ecological diversity and function, while accommodating planned growth in approximately 500,000 acres of Santa Clara County.

The Airport is located within the area covered by the Habitat Plan. Development projects at the Airport are not, however, "covered activities" under the Habitat Plan.

Local

Envision San José 2040 General Plan

The *Envision San José 2040 General Plan* includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects with the City. The policies listed in Table 4.4-1 are specific to biological resources and are applicable to the proposed Project.

City of San José Tree Policies

Street trees of any size can only be removed upon issuance of a tree removal permit from the City. For trees on private property, a tree removal permit is required for the removal of "ordinance" trees. Ordinance trees are defined as trees over 38 inches in circumference, or approximately 12 inches in diameter, at a height of 4.5 feet above natural grade. Ordinance trees are generally mature trees that help beautify the City, slow erosion of topsoil, minimize flood hazards, minimize the risk of landslides, increase property values, and improve local air quality.

In addition, any tree found by the City Council to have special significance based on factors including, but not limited to, its history, girth, height, species, or unique quality, can be designated as a "Heritage tree" (San José Municipal Code Section 13.28.330 and 13.32.090). It is unlawful to vandalize, mutilate, remove, or destroy such heritage trees. There are no heritage trees at the Airport.

Table 4.4-1: General Plan Policies – Biological Resources	
Policy	**Description**
ER-5.1	Avoid implementing activities that result in the loss of active native birds' nests, including both direct loss and indirect loss through abandonment, of native birds. Avoidance of activities that could result in impacts to nests during the breeding season or maintenance of buffers between such activities and active nests would avoid such impacts.
ER-5.2	Require that development projects incorporate measures to avoid impacts to nesting migratory birds.
MS-21.4	Encourage the maintenance of mature trees, especially natives, on public and private property as an integral part of the community forest. Prior to allowing the removal of any mature tree, pursue all reasonable measures to preserve it.
MS-21.5	As part of the development review process, preserve protected trees (as defined by the Municipal Code), and other significant trees. Avoid any adverse effect on the health and longevity of protected or other significant trees through appropriate design measures and construction practices. Special priority should be given to the preservation of native oaks and native sycamores. When tree preservation is not feasible, include appropriate tree replacement, both in number and spread of canopy.
MS-21.6	As a condition of new development, require, where appropriate, the planting and maintenance of both street trees and trees on private property to achieve a level of tree coverage in compliance with and that implements City laws, policies, or guidelines.
CD-1.24	Within new development projects, include preservation of ordinance-sized and other significant trees, particularly natives. Any adverse effect on the health and longevity of such trees should be avoided through design measures, construction, and best maintenance practices. When tree preservation is not feasible include replacements or alternative mitigation measures in the project to maintain and enhance our Community Forest.

City of San José Riparian Corridor Protection and Bird Safe Design Policy (Policy 6-34)

The Riparian Corridor Protection and Bird Safe Design Policy sets guidelines on how areas along natural streams should be treated and establishes development guidelines for general site design, as well as guidance for the design of buildings, landscaping, and public recreation facilities related to their interference with riparian corridors. It also provides guidelines for operational activities within natural stream areas, such as vegetation removal, erosion control, flood control, and construction. The riparian policy indicates that "all buildings, other structures (with the exception of bridges and minor interpretive structures that provide information to visitors), impervious surfaces, outdoor activity areas (except for passive or intermittent activities) and ornamental landscaped areas should be separated a minimum of 100 feet from the edge of the riparian corridor (or top of bank whichever is greater)." The City's policy allows for exceptions based on adjacent land uses and setbacks, existing setbacks, and other factors. The setback for a particular project is typically determined on a case-by case basis.

4.4.1.2 *Existing Conditions*[98]

Existing Biological Communities

H.T. Harvey & Associates conducted reconnaissance-level surveys on January 23, 2019 and identified two vegetation community types at the Airport: developed/landscaped and ruderal grassland. These communities are described below and are shown on Figure 4.4-1. Additional site visits were undertaken in February and March of 2019.

Developed/Landscaped

The majority of the Airport (approximately 410.4 acres) consists of developed and landscaped habitat. Hardscape areas at the Airport include runways and taxiways, terminal buildings, outbuildings, hangars, and associated parking structures. The fuel farm area to the north consists of three fuel tanks, an administrative building, and an associated paved roadway. At the northeast corner of the Airport, on the opposite side of the Guadalupe River, is Economy Lot 1, which is a paved parking area. The very high frequency omni-directional range (VOR) site, which is at the north end of the Airport across De La Cruz Boulevard, supports a large navigational antenna and an access road. Amongst these areas, particularly along the east side of the terminal buildings, are various landscaped areas which are mown and maintained by Airport staff. These landscaped areas support few trees and minimal vegetation, likely to minimize the attraction of wildlife to the airfield.

For aircraft safety[99], wildlife species are generally discouraged from occurring on the airfield, and developed portions of the Airport support little to no vegetation, with the exception of a few small landscaped areas along the terminal buildings as described above. Nevertheless, common wildlife species that are associated with urban areas and tolerant of high levels of human disturbance occur within developed portions of the study area. Examples of these types of species include nonnative European starling, house sparrow, house mouse, and black rat, as well as the native western fence lizard, raccoon, mourning dove, and northern mockingbird.

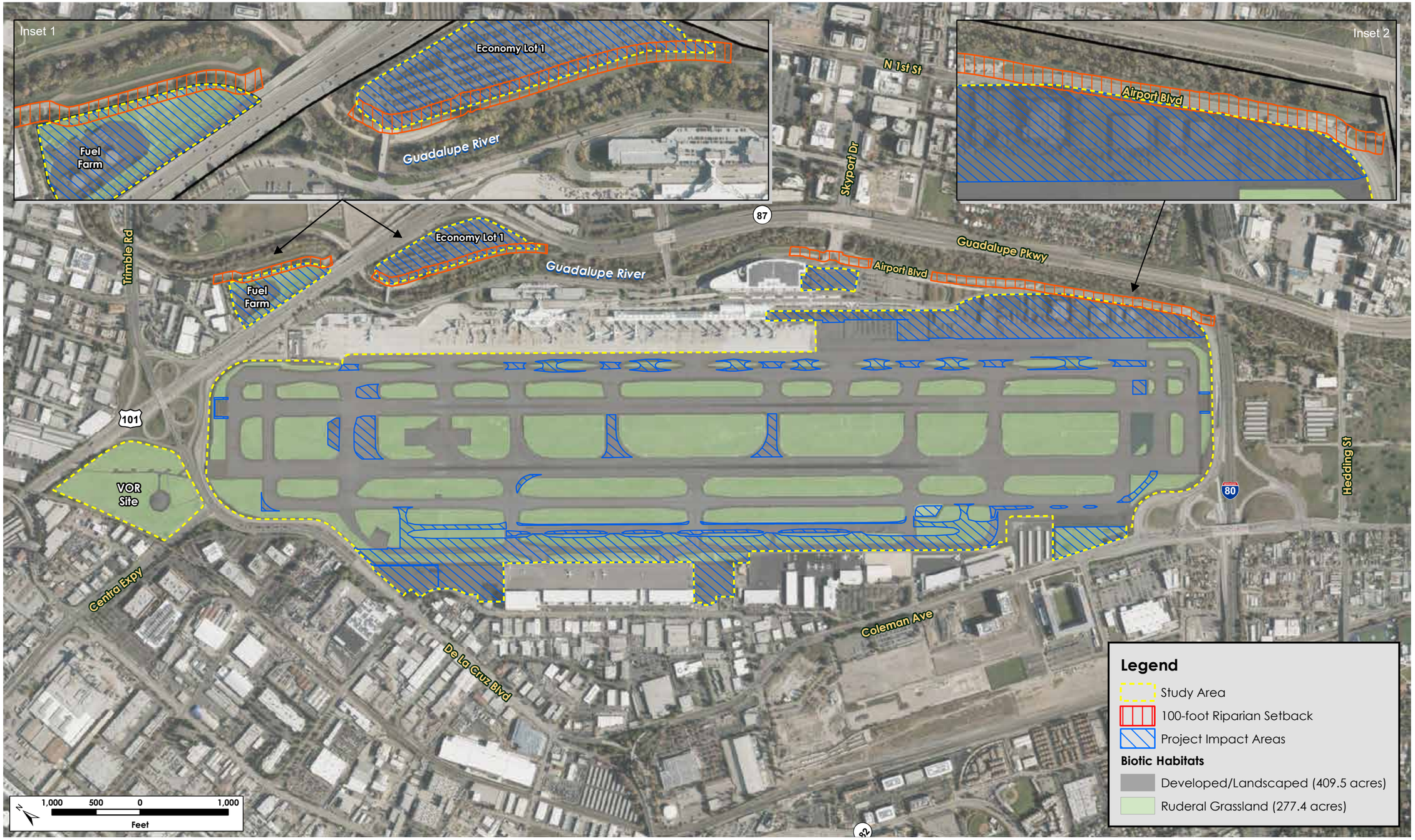
Ruderal Grassland

Approximately 248.8 acres of ruderal grassland are present between the runways, taxiways, and other paved/developed areas on the active airfield. These areas are mown frequently to discourage wildlife use and maintain visibility, and the dominant plants occurring in these areas are well adapted to such frequent disturbance. This ruderal grassland is dominated by nonnative, annual grasses, such as ripgut brome, Italian ryegrass, and wild oats. Common forbs include nonnative species such as black mustard, Russian thistle, and bull mallow.

The VOR site supports 23.6 acres of ruderal grassland vegetation similar to that within vegetated portions of the active airfield. However, mowing at the VOR site appears to be less frequent, and the

[98] Plant and animal species described in this section are referred to using their common name. Latin names for these species are contained in Appendix E.

[99] When an aircraft strikes a bird (or birds), especially if it results in engine damage, accidents can occur. Concentrations of birds in the approach and departure patterns and landing areas at an airport or in the immediate vicinity of an aircraft can represent a high-risk condition. Pursuant to FAA policy, the Airport has a wildlife management program to minimize bird strike hazards. Since ground squirrels attract birds of prey, the management program includes the control of ground squirrel populations.



Source: H.T. Harvey & Associates, Sep. 2019.

EXISTING BIOLOGICAL HABITATS

FIGURE 4.4-1

eastern portion contains some young coyote brush, fennel, and jubata grass, indicating that this area has not been recently mown. Several Mexican fan palms are present along the northeastern and western edges of the VOR site.

The areas of ruderal grassland habitat within the airfield are managed to discourage wildlife species, and these areas are also regularly disturbed by mowing. Due to this intensive management, the grassland habitat within the airfield provides limited habitat for wildlife species. Nevertheless, moderate numbers of California ground squirrels and Botta's pocket gophers are present throughout the ruderal grassland areas within the airfield. Burrowing owls have inhabited these grassland areas for decades and are present year-round. Wintering grassland birds such as the red-winged blackbird and Say's phoebe forage in these grasslands. Few grassland-nesting birds breed in these areas, but small numbers of western meadowlarks may nest around the airfield and forage here year-round. Aerial foragers such as the black phoebe, cliff swallow, and Mexican free-tailed bat will forage aerially over this habitat for insects. Diurnal raptors such as red-tailed hawks forage for small mammals over grasslands during the day, and at night nocturnal raptors, such as barn owls, will forage for nocturnal rodents, such as deer mice.

The ruderal grassland habitat at the VOR site, which is located to the north of the Airport and supports a large radio navigation system to assist with aircraft navigation, is partially maintained by occasional mowing. A number of artificial burrowing owl burrows have been installed at the VOR site; however, burrowing owls are not currently known to occur at the site and no owls or burrows of California ground squirrels to provide suitable nesting and roosting habitat for owls were observed here during the January 2019 site visit. Other native rodent species that could potentially occur in this habitat include the California vole, deer mouse, and black-tailed jackrabbit. Because the vegetation within much of this site is allowed to grow tall, it provides foraging opportunities for a number of additional bird species including the bushtit and lesser goldfinch, which forage on seeds in ruderal areas. Aerial foragers such as the black phoebe, cliff swallow, and Mexican free-tailed bat will forage aerially over this habitat for insects. Diurnal and nocturnal raptors such as those that occur on the airfield forage for small mammals over grasslands; the Mexican fan palms provide suitable nesting sites for these species, and the VOR radio and other tall structures provide perching sites from which these species can forage on small mammals. A pair of white-tailed kites was observed on the site during the January 2019 site visit, and this species may nest in trees on the site or in nearby areas and forage in grasslands at the VOR site year-round.

The ruderal grassland habitat at the Fuel Farm is limited in extent and the majority of the wildlife species that occur in this area occur primarily in adjacent developed or riparian areas and use this grassland for foraging. Such species include the house finch, bushtit, and lesser goldfinch, which forage on seeds in ruderal areas, and the black phoebe, cliff swallow, and Mexican free-tailed bat, which forage aerially over ruderal habitats for insects. No burrows of California ground squirrels or Botta's pocket gophers were observed in this habitat during the site visit; however, other rodent species such as the California vole and deer mouse may occur here. Numerous feral cats were observed near the Fuel Farm site during the March 10 site visit.

Medium-sized mammal species such as the native striped skunk, raccoon, and nonnative Virginia opossum and feral cat utilize ruderal habitats in the study area for foraging. Reptiles such as western fence lizards, western skinks, western terrestrial garter snakes, and southern alligator lizards frequent grassland habitats, and may occur in grassland habitats or adjacent developed habitats in the study area.

Biological Communities Adjacent to the Airport

The Airport is adjacent to the Guadalupe River, which supports willow riparian forest just outside the boundary of the Airport, near the fuel farm and adjacent to Economy Lot 1 and Airport Parkway. Along the active floodplain of the Guadalupe River adjacent to the fuel farm (i.e., outside the Airport), the overstory vegetation consists of Fremont cottonwood, red willow, and arroyo willow. The stream banks immediately outside the fuel farm are artificially constructed levees that support none of these woody, native riparian forest species, with an improved access road running along the top of bank. Farther south, near Economy Lot 1 and the southern portion of the Airport along Airport Parkway, the channel is generally broader, and woody vegetation extends farther outboard of the stream's ordinary high-water mark this far south. A limited number of nonnative trees are present, including weeping willow and holly oak along top of bank in the southern portion of the Airport. Understory vegetation along this reach of the Guadalupe River varies from relatively high-quality, dense cover of California blackberry to areas dominated by dense nonnative species such as English ivy and Himalayan blackberry.

Many bird species that are attracted to herbaceous vegetation and aquatic habitats along the Guadalupe River move through portions of the Airport, primarily near the fuel farm and Economy Lot 1, when flying along the Guadalupe River.

Reptiles such as the gopher snake, western fence lizard, and southern alligator lizard also are present in the riparian habitat along the Guadalupe River. Amphibians such as the arboreal salamander occur in the leaf litter in this habitat and the native Pacific tree frog may also occur. Urban-adapted mammals, such as the native raccoon and striped skunk, as well as the non-native Virginia opossum, Norway rat, black rat, feral cat, and eastern gray squirrel, reside in riparian habitat adjacent to the Airport.

Existing Special-Status Species

Special-Status Plant Species

The Biological Resources Report indicates that there are records of 78 different species of special-status plants within several miles of the Airport (see Appendix E). According to the Biological Resources Report, 77 of the 78 species known to occur in the area were determined to be absent from the project area for at least one of the following reasons:

- Absence of suitable habitat types;
- Lack of specific microhabitat or other requirements, such as serpentine, alkaline, or sandy soils;
- The elevation range of the species is outside of the range of the Airport; and/or
- The species is presumed extirpated from the project vicinity.

Although there are no known occurrences of Congdon's tarplant at the Airport, marginally suitable habitat occurs on the Airport for Congdon's tarplant, and therefore it is considered to potentially occur in ruderal grassland biological community areas at the Airport.

Special-Status Animal Species

The following special-status species that are present in less urbanized settings in the South Bay area, or in specialized habitats elsewhere in South Bay, are absent from the Airport due to a lack of suitable habitat and/or isolation of the Airport from populations by urbanization: California tiger salamander, California red-legged frog, foothill yellow-legged frog, bald eagle, San Francisco dusky-footed woodrat, and American badger.

Many tributary streams to the San Francisco Bay provide habitat for the Central California Coast steelhead and the Central Valley Fall-run Chinook salmon. However, there are no streams or aquatic habitat within the Airport. Therefore, these species do not occur within the Airport. However, both of these species may occur in the Guadalupe River, which is adjacent to the Airport. In addition, the yellow warbler and San Francisco common yellowthroat may potentially nest in riparian habitats along the Guadalupe River adjacent to the Airport.

A number of special-status bird species may occasionally occur at the Airport as nonbreeding foragers. These are the Bryant's savannah sparrow, peregrine falcon, bald eagle, and golden eagle. The pallid bat, a California species of special concern, may also forage aerially over habitats in the Airport. These species are not expected to nest, roost, or breed in or immediately adjacent to the Airport. Additionally, the grasshopper sparrow, a bird species that is considered a California species of special concern only when it is nesting, may occur occasionally in grasslands within the Airport as a nonbreeding transient, forager, or migrant. Tricolored blackbirds have not been recorded nesting in the vicinity of the Airport, and the species does not nest in the types of habitats that occur on and adjacent to the site. Therefore, this species is not expected to breed within or immediately adjacent to the study area, and at most it occurs as an uncommon and irregular forager on the site during the nonbreeding period.

The western pond turtle, white-tailed kite, and loggerhead shrike may potentially breed or occur in or immediately adjacent to the Airport.

Existing Burrowing Owl Population and Habitat

Overview

The burrowing owl is a special status species that is present at the Airport. Burrowing owls are small, terrestrial owls of open country that inhabit annual and perennial grasslands, typically with sparse or nonexistent tree or shrub canopies. In California, burrowing owls are found in close association with California ground squirrels; owls use the abandoned burrows of ground squirrels for shelter and nesting. The nesting season as recognized by the CDFW extends from February 1 through August 31. After nesting is completed, adult owls may remain in their nesting burrows or in nearby burrows, or they may migrate; young birds disperse across the landscape distances of 0.1 mile to 35 miles from their natal burrows. Burrowing owl populations have declined substantially in the San Francisco Bay Area in recent years, with declines estimated at 4–6% percent annually.

Burrowing owls occur year-round in the Santa Clara Valley and are commonly present in open, agricultural, or grassland areas with active burrows of California ground squirrels. However, burrowing owls are increasingly disappearing from "infill" locations on the urban Valley floor.

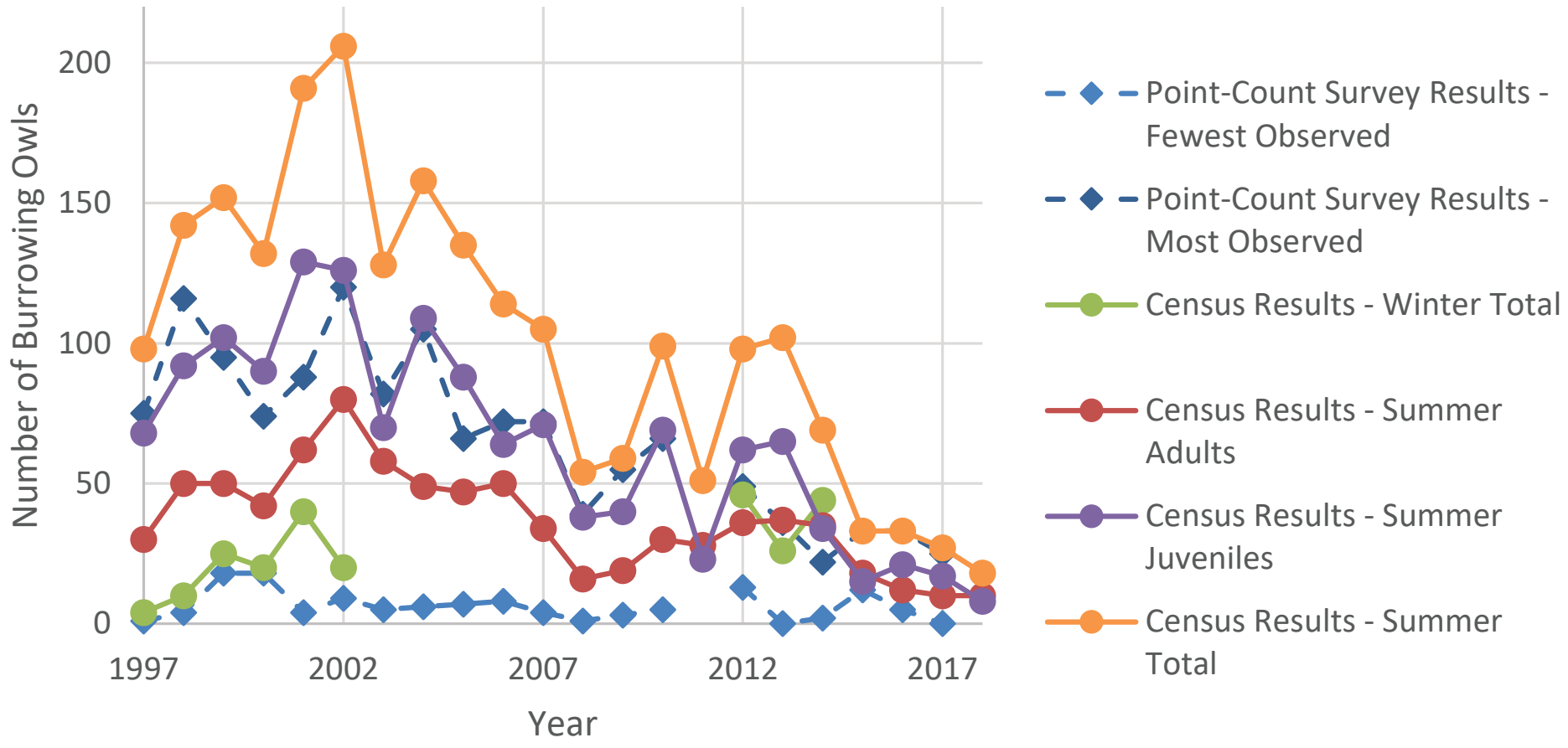
A population of burrowing owls has been present year-round at the Airport for decades. The Airport has monitored the owl population since 1989 as part of general monitoring of the numbers of wildlife species that occur on the airfield. This monitoring consists of year-round bi-monthly point-count surveys as well as two burrowing owl censuses each year, one during the nesting season and one during the non-nesting season.

A summary of the monitoring results from 1997 to 2018 is provided on Figure 4.4-2. Numbers of owls at the Airport appear to have increased initially between 1997 and 2002, when the Airport's Burrowing Owl Management Plan (BOMP) was first implemented. Since then, numbers have fluctuated considerably among years, but there has been a gradual, overall decline in owl numbers since the early 2000s. Nesting populations over the past three years have been lower than have ever been previously recorded. Based on various estimates, numbers of nesting pairs at the Airport were approximately 5–6, 3–6, and 5 in 2016, 2017, and 2018, respectively.

The reasons for the decline in owl numbers at the Airport are not fully known. According to the Habitat Plan, a portion of the owls' population decline can be attributed to the regional decline in burrowing owl numbers that has occurred throughout the South Bay. Further, the BOMP anticipated that burrowing owls at the Airport were likely to decline in future years due to a reduction in available burrows from ground squirrel control efforts on the airfield. Such ground squirrel control efforts are likely responsible for the low numbers of burrowing owls present in the smaller patches of grassland in the central and northeastern portions of the airfield (i.e., northeast of Runway 12R-30L; see Figure 4.4-3). However, based on the relatively high availability of suitable burrows observed in portions of the airfield southwest of Runway 12R-30L in January 2019 compared to the low numbers of owls documented in recent years, limited burrow availability does not appear to be the sole explanation for the small numbers of owls that currently inhabit the airfield. Other potential factors may include reduced food availability, predation, and/or habitat loss.

Burrowing Owl Use of the Airfield

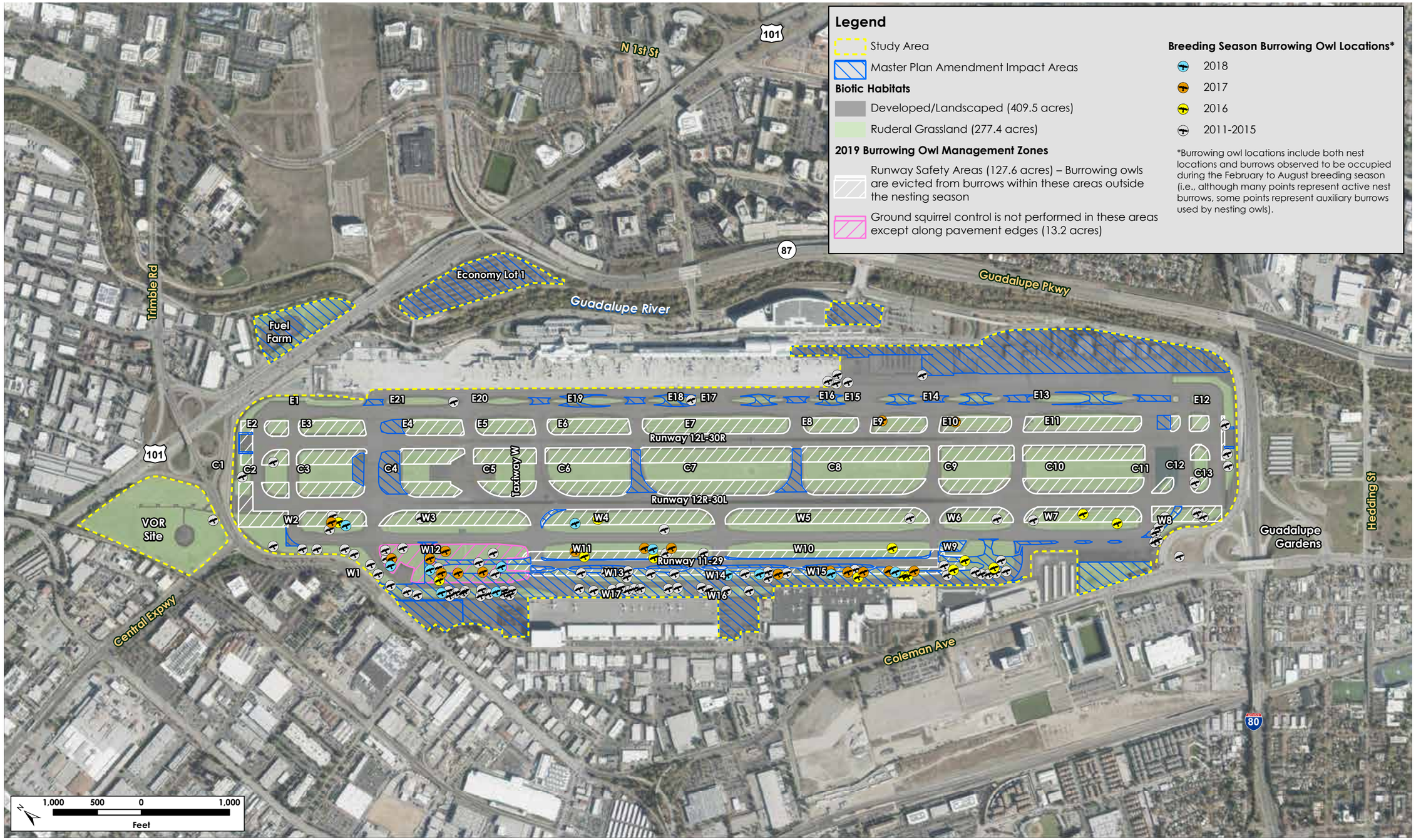
The grassland infield areas within the airfield currently provide 248.8 acres of nesting, roosting, and/or foraging habitat for burrowing owls; foraging habitat is present in grassland infields throughout the airfield, while suitable nesting and roosting habitat is present primarily southwest of Runway 12R-30L. The grassland infields are regularly mowed and subject to relatively low levels of direct disturbance from humans and predators and as a result provide attractive habitat year-round for the Airport's resident population of burrowing owls. Owls predominantly occur in the southwest portion of the airfield where burrows of California ground squirrels are present. Owls were previously known to nest and occur regularly in natural burrows located northeast of Runway 12R-30L, but California ground squirrel activity in this area has been limited in recent years, and the infields northeast of Runway 12R-30L currently support few, if any, burrows of California ground squirrels.



Source: H.T. Harvey & Associates, July 23, 2019.

SUMMARY OF BURROWING OWL MONITORING RESULTS AT THE AIRPORT 1997-2018

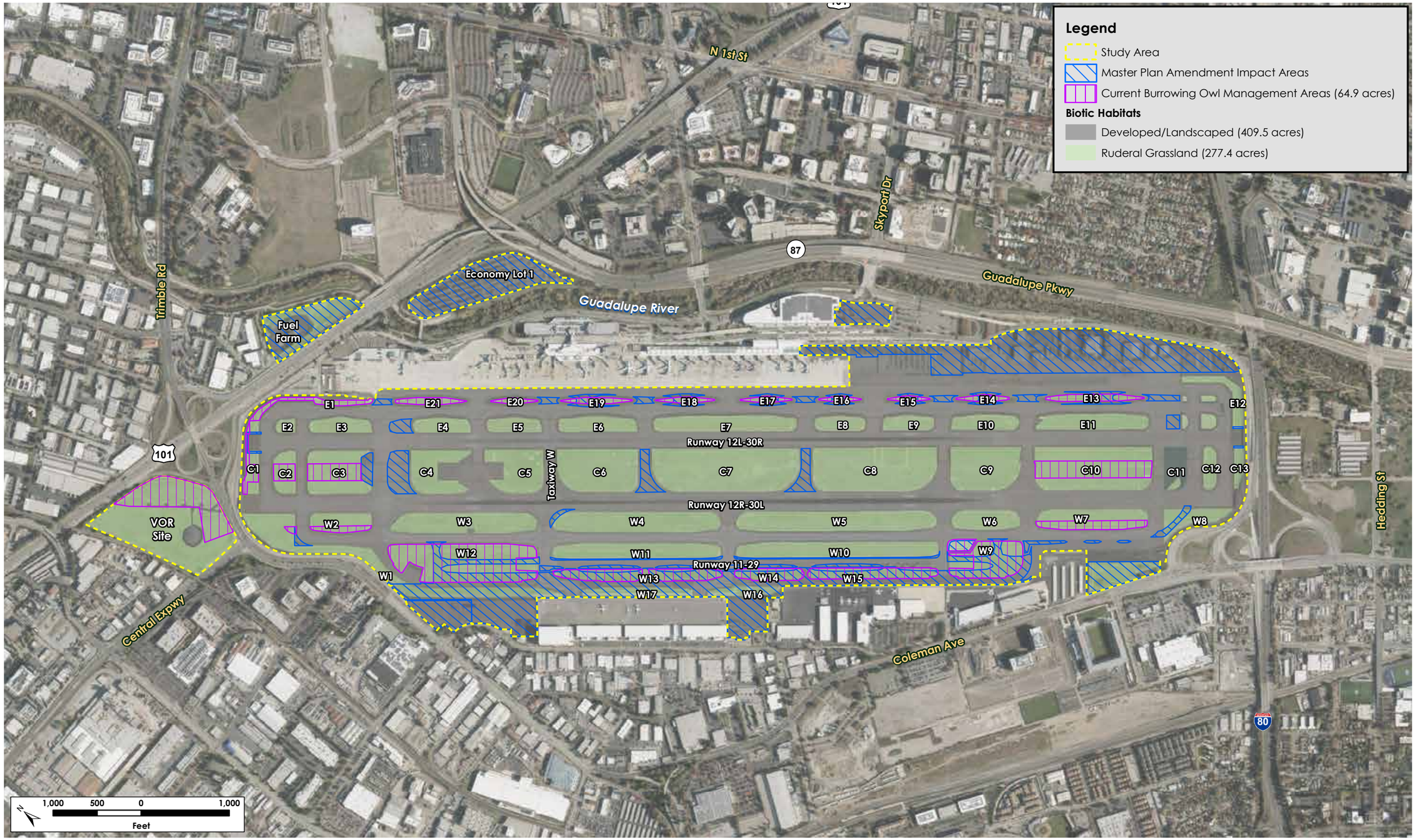
FIGURE 4.4-2



Source: H.T. Harvey & Associates, Sep. 2019.

BURROWING OWL IMPACTS

FIGURE 4.4-3



Source: H.T. Harvey & Associates, Sep. 2019.

BURROWING OWL MANAGEMENT AREAS AND MITIGATION AREAS

FIGURE 4.4-4

Because burrowing owls have not nested throughout the entire airfield in recent years, the extent of burrowing owl nesting habitat at the airfield was determined based on the results of the 2019 site visit as well as the 2011–2018 breeding season censuses. As discussed below, Runway Safety Areas are managed to minimize owl use, but such areas were not excluded from consideration as suitable nesting habitat because owls often occupy burrows within these areas during the breeding season (Figure 4.4-3). The majority of occupied breeding-season burrowing owl burrows in recent years (i.e., 2016 to 2018) has been located southwest of Runway 12R-30L and all but one pair of owls nested southwest of Runway 12R-30L between 2016 and 2018. Recent California ground squirrel activity on the airfield has also been concentrated southwest of Runway 12R-30L, with few squirrels remaining northeast of Runway 12R-30L to establish burrow complexes. Based on this information, all grassland habitat located southwest of Runway 12R-30L is considered as suitable nesting, roosting, and foraging habitat for burrowing owls, and all remaining portions of the airfield northeast of Runway 12R-30L is considered as foraging habitat only.

Burrowing Owl Use of the VOR Site

The VOR site supports 23.6 acres of grassland habitat and a total of 99 artificial burrows have been installed in the portion of the site currently considered a burrowing owl management area; see Figure 4.4-4. No burrowing owls were observed at this site during the January 2019 site visit and burrowing owls were last known to occur on the site in 2014. The site is not mowed as frequently as the airfield and at the time of the January 2019 site visit, the vegetation in the northern half of the site (currently considered a burrowing owl management area) was several feet tall, while the vegetation in the southern portion of the site was taller than the vegetation on the airfield, but had been managed more recently compared to the northern portion of the site.

The artificial burrows on the VOR site have not been regularly maintained. In January 2019, the artificial burrows at the VOR site were observed to be entirely or partially blocked by vegetation and dirt, making them inaccessible to owls. As shown on the two photos, below, a number of tall poles, a radio navigation system, and several large trees provide perch sites from which predatory raptors can potentially hunt burrowing owls.

Grassland habitat in the northern portion of the VOR site was several feet tall in January 2019. Tall poles in this area provide perches for raptors that prey upon burrowing owls.

Grassland habitat in the southern portion of the VOR was more recently managed in January 2019. The radio navigation system and several tall trees along the site boundary provide perching sites for raptors that prey upon burrowing owls.

Based on these observations, the VOR site does not currently provide suitable nesting or roosting habitat for burrowing owls due to a lack of natural burrows or open artificial burrows. Further, the VOR site does not currently provide high-quality foraging habitat for owls due to the tall vegetation present (especially in the northern portion of the site) and the presence of perches from which predatory raptors may prey upon burrowing owls.

Existing Burrowing Owl Management

In 1997, the City adopted the BOMP for the Airport with the goals of reducing the potential burrowing owl collisions with aircraft, mitigating impacts of Airport construction projects on burrowing owls; and providing for the long-term maintenance of a stable population of burrowing owls at the Airport. The burrowing owl population at the Airport continues to be managed according to the BOMP, although some changes to the management regime have been implemented since 1997. [Note: The adopted Habitat Plan, described in Section 4.4.1.1, includes a component, the goal of which is to "increase the size and sustainability of the breeding population and increase the distribution of breeding and wintering burrowing owls in the study area."[100]]

Management of burrowing owls at the Airport has consisted of a balance between encouraging the presence of owls on the airfield and at the VOR site while maintaining safe conditions for aircraft. Burrowing owls accounted for 6.36% of total aircraft strikes between 2003 and 2017, with a range of 0 to 9 strikes reported per year during this period. The presence of California ground squirrels within the airfield is also a safety issue; ground squirrels attract raptors such as red-tailed hawks, which can also collide with aircraft, and their burrows can damage pavement and equipment, creating hazards. The BOMP designated Runway Safety Areas within which burrowing owls are routinely evicted to minimize aircraft collisions, as well as management areas within which the presence of burrowing owls is encouraged (Figures 4.4-3 and 4.4-4). Current airfield management practices related to burrowing owls, which are overseen by a U.S. Department of Agriculture (ASDA) biologist under contract to the Airport, are as follows:

- Burrowing owls are evicted from occupied burrows (using one-way doors) within the Runway Safety Areas (see Figure 4.4-3) outside the nesting season to minimize collisions with aircraft, but owls are allowed to remain in other portions of the airfield (or within the Runway Safety Areas, if they are detected during the nesting season). Burrows of California ground squirrels that are not occupied by owls are periodically closed within Runway Safety Areas to minimize the potential for owls to occupy those areas.

- Control of California ground squirrels is implemented in all portions of the airfield, including the burrowing owl management areas, with the exception of infield W12 (Figure 4.4-3). Within this area, the control of ground squirrels is limited to pavement edges to prevent damage to pavement resulting from burrows.

- Infield areas are mowed regularly, and vegetation height is maintained below 12 inches.

[100] Source: Santa Clara Valley Habitat Plan, pp. 5-7, 2012.

California ground squirrels were known to have been more abundant within airfield infields prior to the implementation of the Airport's rodent control program. Ground squirrel management activities have not eliminated ground squirrels from the airfield (including burrowing owl management areas), but are of sufficient intensity to (1) ensure that numbers of California ground squirrels on the airfield remain relatively low in order to minimize the attraction of predators to the airfield (and potential collisions of predators with aircraft), and (2) minimize the establishment of burrows in areas where they will result in damage to airfield infrastructure (e.g., at runway and taxiway edges). The number of burrows on the airfield appears to be relatively stable from year to year. For example, although the interior of infield W12 is the only area where ground squirrel management is not implemented, ground squirrels continue to be present in a number of other infields southwest of Runway 12R-30L. Based on observations from the January 2019 site visit, sufficient natural burrows are present on the airfield to support the current population of owls and perhaps more owls. No artificial burrows are currently present on the airfield; all artificial burrows have been relocated to the VOR site.

Wildlife Corridors

Wildlife corridors are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as between foraging and denning areas, or they may be regional in nature, allowing movement across the landscape. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. There are no wildlife corridors within the Airport; however, the Guadalupe River and its associated riparian zone are a wildlife corridor and are located adjacent to the Airport.

Wetlands and Other Waters of U.S/State

There are no wetlands or other waters of the U.S. or state within the Airport. The nearest jurisdictional aquatic feature is the Guadalupe River, adjacent to the Airport.

4.4.2 Discussion of Biological Impacts

For the purpose of determining the significance of the project's impacts on biological resources, a significant impact would occur if the project would:

1) 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 CDFW or USFWS
2) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS
3) 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
4) 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

5) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
6) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.4.2.1 *Impacts on Special Status or Protected Species*

Potential Impacts to the Congdon's Tarplant

Impact BIO-1:	**If determined to be present, the Project could have a substantial adverse effect on the Congdon's tarplant. Mitigation is included in the Project for this impact. (Less Than Significant Impact with Mitigation)**

Construction activities related to the Project would permanently impact up to 108.7 acres of developed/landscaped habitat and 39.5 acres of ruderal grasslands. Permanent impacts would occur as a result of airfield projects (i.e., the modifications of taxiways and runways and relocation of the general aviation run-up pad); the construction of new parking garages; the expansion of Terminal B; the construction of a new business hotel; and the expansion, relocation, and modification of Airport facilities. The proposed activities would alter and/or remove the existing vegetation within these areas. Both the developed/landscaped and ruderal grassland habitats are relatively abundant and widespread regionally and are not particularly sensitive or valuable (from the perspective of providing important plant or wildlife habitat) aside from the potential importance of grassland to Congdon's tarplant. Therefore, impacts on these habitats would not be considered significant under CEQA.

Congdon's tarplant, a special-status plant species, has the potential to occur within ruderal grassland habitat in the study area, possibly including the airfield, fuel farm, and VOR site. The eastern portion of the fuel farm site is an old construction staging area covered in gravel aggregate which does not provide potential habitat. If this species is present, the Project may affect Congdon's tarplant plants due to disturbance or destruction of individuals and suitable habitat. Direct impacts could include grading or filling areas supporting this species, trampling or crushing of plants, and soil compaction. Indirect impacts could include increased mobilization of dust onto plants, which can affect their photosynthesis and respiration, or changes to hydrology supporting these plants due to grading or construction in nearby habitats.

The following measures would be implemented as part of the Project to reduce potential impacts to Congdon's tarplant to a less than significant level.

MM BIO-1.1: Pre-Activity Surveys. No more than five years prior to initial ground disturbance for any part of the Project that impacts ruderal grassland at the airfield, Fuel Farm, and VOR site, a focused survey for Congdon's tarplant shall be conducted within the project footprint and a 50-foot buffer around the project footprint during the appropriate blooming period (May – November, inclusive). This buffer may be increased by the qualified plant ecologist depending on site-specific conditions and activities planned in the areas but must be at least 50 feet wide. Situations for which a greater buffer may be required include proximity to proposed activities expected to generate large volumes of dust, such as grading; potential for project

activities to alter hydrology supporting habitat for the species; or proximity to proposed structures that may shade areas farther than 50 feet away. Surveys are to be conducted in a year with near-average or above-average precipitation (the annual average being 15.8 inches for San José). The purpose of the survey would be to assess the presence or absence of Congdon's tarplant. If the target species is not found in the impact area or the identified buffer, then no further mitigation would be warranted. If Congdon's tarplant individuals are found in the impact area or identified, then MM BIO-1.2 and MM BIO-1.3 would be implemented. The survey will be submitted for review and approval by the City's Director of Planning, Building, and Code Enforcement or his/her designee.

Surveys for Congdon's tarplant may be conducted over large areas simultaneously (rather than having to be conducted prior to each individual project), but surveys for a particular project area must be performed within five years prior to the start of construction for that project to be valid.

MM BIO-1.2: Avoidance Buffers. To the extent feasible, and in consultation with a qualified plant ecologist, the City would design and construct the Project to completely avoid impacts on all populations of Congdon's tarplant within the project footprints or within the identified buffers of the impact areas. Avoided Congdon's tarplant populations would be protected by establishing and observing the identified buffer between plant populations and the impact area. All such populations located in the impact area or the identified buffer, and their associated designated avoidance areas, would be clearly depicted on any construction plans. In addition, prior to initial ground disturbance or vegetation removal, the limits of the identified buffer around special-status plants to be avoided would be marked in the field (e.g., with flagging, fencing, paint, or other means appropriate for the site in question). This marking would be maintained intact and in good condition throughout project-related construction activities.

If complete avoidance is not feasible and more than 10% of a population (by occupied area or individuals) would be impacted as determined by a qualified plant ecologist, MM BIO-1.3 would be implemented.

MM BIO-1.3: Preserve and Manage Mitigation Populations. If avoidance of Congdon's tarplant is not feasible and more than 10% of the population would be impacted, compensatory mitigation would be provided via the preservation, enhancement, and management of occupied habitat for the species, or the creation and management of a new population. To compensate for impacts on Congdon's tarplant, off-site habitat occupied by the affected species would be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and at least one occupied acre preserved for each occupied acre affected), for any impact over the 10% significance threshold. Alternately, seed from the population to be impacted may be harvested and used either to expand an existing population (by a similar number/occupied area to compensate for impacts to Condgon's tarplant beyond the 10% significance threshold) or establish an entirely new population in suitable habitat. The

compensation area could be within the Airport grounds, for example within one of the burrowing owl mitigation sites, or off-site.

Additional criteria for the identification of suitable mitigation sites, success criteria for the mitigation, and mitigation management criteria are listed in Section 6.1.2 of Appendix E. **(Less Than Significant Impact with Mitigation)**

Impacts to Nesting Birds

Impact BIO-2:	**If determined to be present, the Project could have a substantial adverse effect on nesting birds. Mitigation is included in the Project for this impact. (Less Than Significant Impact with Mitigation)**

Various improvements at the Airport that would be constructed under the Project may result in tree removal or may be located within 250 feet of a tree that will be retained. In either case, if birds are nesting in the trees, construction activities could result in direct or indirect harm by causing nest abandonment. Nesting birds are protected by the MBTA and the California Fish & Game Code.

The following measures would be implemented as part of the Project to reduce potential impacts to nesting birds to a less than significant level.

MM BIO-2.1: Avoidance and Inhibition of Nesting. Construction and tree removal/pruning activities shall be scheduled to avoid the nesting season. Tree removal and/or pruning shall be completed before the start of the nesting season to help preclude nesting. The nesting season for most birds and raptors in the San Francisco Bay Area extends from February 1 through August 31.

MM BIO-2.2: Preconstruction Survey(s). If it is not possible to schedule construction activities during the period of September 1 through January 31, then a qualified ornithologist shall conduct a preconstruction survey for nesting raptors and other migratory birds within on-site trees as well as all trees within 250 feet of the site to identify active bird nests that may be disturbed during project construction. This survey shall be completed no more than fourteen days prior to the initiation of demolition/construction activities (including tree removal and pruning). During this survey, the ornithologist shall inspect all trees and other possible nesting habitats in and immediately adjacent to the construction areas for nests.

If the survey does not identify any nesting birds that would be affected by construction activities, no further mitigation is required.

If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist (in consultation with CDFW) shall designate a construction-free buffer zone to be established around the nest to ensure that no nests of species protected by the MBTA and California Fish and Game Code would be disturbed during construction activities. The buffer shall remain in place until a qualified ornithologist has determined that the nest is no longer active.

MM BIO-2.3: Reporting. A final report on nesting birds and raptors, including survey methodology, survey date(s), map of identified active nests (if any), and protection measures (if required), shall be submitted and approved by the City's Director of Planning, Building, and Code Enforcement or his/her designee prior to the start of grading. **(Less Than Significant Impact with Mitigation)**

Impacts to Roosting Bats

Impact BIO-3:	**If determined to be present, the Project could have a substantial adverse effect on roosting bats. Mitigation is included in the Project for this impact. (Less Than Significant Impact with Mitigation)**

Common bat species, such as the Mexican free-tailed bat, can potentially roost in buildings at the Airport, especially hangars such as those at 1239, 1253, 1277, 1311, and 1455 Airport Boulevard. These buildings were being actively used for aviation purposes at the time of a 2019 site visit, and if they remain in use, they are unlikely to be colonized by large numbers of roosting bats. However, there is some potential for a large colony of roosting bats to become established in these hangars, should aviation activities cease in a hangar in the future. The Project includes the removal of a number of these existing hangar buildings, which would result in the direct physical disturbance of any roosting bats that may be present as well as the loss of roosting sites. In addition, demolition of structures during the bat maternity season (approximately March 15 to August 31) could result in the injury or mortality of young and lactating females within a roost site. Impacts on a large day roost (i.e., 100 or more bats) of common species of bats, or cumulative impacts on 100 or more bats as multiple buildings are removed, would be considered a significant impact, as this could have a substantial effect on regional populations of the species.

Implementation of the following mitigation measures would reduce impacts to roosting bats to less than significant levels. Because many buildings would be removed under the Project over a period of years, these measures would be implemented any time bats are encountered in order to avoid potential cumulative impacts on 100 or more bats during all building removal under the Project.

MM BIO-3.1: Conduct Pre-Activity Surveys for Roosting Bats. A Pre-activity survey for roosting bats shall be conducted prior to any removal or renovation of hangar buildings with metal siding or buildings with closed areas such as an attic space, particularly those that are unoccupied. No pre-activity survey is required for buildings without attics or metal siding. The survey shall be conducted by a qualified bat biologist. If no active roosts are found, then no further action is warranted. If a roost is present, a qualified bat biologist shall determine the species and number of individuals present.

MM BIO-3.2: Avoid Disturbance of Active Roosts. If an occupied roost is found in a structure that would be disturbed or removed by proposed activities, the Project may be redesigned to avoid the disturbance of the structure. If the roost is unoccupied at the time of the survey, the Airport may choose to install bat exclusion devices to prevent bats from taking up occupancy of the structure prior to the onset of the proposed activity. If avoidance is not feasible, MM BIO-3.3 and MM BIO-3.4 shall be implemented.

MM BIO-3.3: Avoid Disturbance of Maternity Roosts. If an active maternity roost is present within the building to be demolished and the Project cannot be redesigned to avoid removal or disturbance of the occupied roost, disturbance shall not take place during the maternity season (as determined by the qualified bat biologist, but approximately March 15 to August 31), and an appropriate disturbance-free buffer zone (also determined by the qualified bat biologist) shall be observed during this period to avoid disturbing the roosting bats.

MM BIO-3.4: Exclude Bats Prior to Disturbance. If disturbance of an active non-breeding roost cannot be avoided, the individuals shall be safely evicted outside the maternity season (as determined by the qualified bat biologist) between approximately August 1 and March 15. Bats may be evicted through exclusion after notifying the CDFW. Exclusion methods may include the installation of one-way doors and/or use of ultrasonic deterrence devices. One-way doors and/or deterrence devices should be left in place for a minimum of two weeks with a minimum of five fair-weather nights with no rainfall and temperatures no colder than 50°F. **(Less Than Significant Impact with Mitigation)**

Impacts to the Burrowing Owl

Impact BIO-4:	**The Project would have a substantial adverse effect on the burrowing owl. Mitigation is included in the Project for this impact. (Less Than Significant Impact with Mitigation)**

The Project would significantly impact burrowing owls as a result of the permanent removal of nesting and foraging habitat, the degradation of remaining habitat, increased mortality due to collisions with aircraft, increased disturbance due to increased traffic and airfield activities, and disturbance or direct impacts from construction. Project activities would result in the loss of suitable nesting, roosting, and foraging habitat for burrowing owls at the airfield. Project activities located southwest of Runway 12R-30L would result in impacts on 32.4 acres of suitable nesting, roosting, and foraging habitat for burrowing owls, or 24.4% of the existing nesting and roosting habitat at the airfield. Project activities located northeast of Runway 12R-30L are limited to infields E13–E19 and are considered impacts on burrowing owl foraging habitat only (2.1 acres). Per the direction of the City, it is assumed that all Project impacts on grassland infields within the airfield would be permanent (i.e., that these areas would be replaced with asphalt). Impacts of the permanent removal of 32.4 acres of burrowing owl nesting, roosting, and foraging habitat and 2.1 acres of foraging habitat are as follows:

- Infields E13–E19 are small, narrow grassland areas that provide few, if any, ground squirrel burrows and have not been used for nesting by owls since 2012. Currently, these areas provide potential foraging habitat due to their grassland land cover, though these grassland patches likely have limited foraging habitat value to burrowing owls due to their small size. The realignment/closing of existing cross-taxiways on the northeast side of the airfield as proposed under the Project would fragment these small infields and reduce their size. This impact is expected to reduce the value of these infields to owls as potential foraging areas compared to existing conditions. Because these areas provide only foraging habitat (i.e., and not nesting

habitat) that is of limited value to owls, the permanent removal of 2.1 acres of this habitat is not expected to substantially affect the airfield's population of owls.

- A small corner of infield W4 would be removed as part of the strengthening of Taxiway J under the Project. This area currently supports nesting, roosting, and foraging habitat for burrowing owls, and owls were known to nest in this infield as recently as 2018. Because the impact area is relatively small compared to the size of the infield, the removal of this habitat would not substantially reduce the value of infield W4 as nesting, roosting, and foraging habitat for owls, and owls are expected to continue to use infield W4 following the strengthening of Taxiway J.
- Infield W8 would be reduced in size and fragmented into two infields as part of the extension and widening of Taxiway W. This area currently supports nesting, roosting, and foraging habitat for owls, and owls were known to nest in this area as recently as 2015. The fragmentation and reduction in size of this infield is expected to reduce its value to burrowing owls, and owls may reduce their use of infield WS and possibly no longer nest within this area following the extension and widening of Taxiway W.
- A grassland area without a designation number, located in the southern portion of the airfield along Coleman Avenue, would be removed under the Project, and the general aviation run-up pad would be relocated to this area (i.e., existing grasslands would be converted to developed areas). Burrowing owls have not been documented nesting within this area, and until 2011 this area was entirely developed and supported San José State University facilities. However, this area currently supports grasslands with many burrows of California ground squirrels. At the time of the March 2019 site visit, the vegetation here was several feet tall, indicating that it is not mowed as frequently as the habitat on the rest of the airfield, but a review of aerial photos indicates that the site is mowed regularly. Therefore, this area provides potential nesting, roosting, and foraging habitat for burrowing owls.
- Infields W15, W16, and W17, and a portion of infield W1 would be removed as part of the closure of Runway 11-29, closure of Taxiway V, creation of a new taxiway, and expansion of Airport facilities in this area. These infields support burrowing owl nesting, roosting, and foraging habitat and have historically supported nesting by multiple pairs of owls each year. Two to three pairs of owls nested in infield W15 as recently as 2018. Because these areas have been historically used by owls and continue to be occupied by multiple pairs of owls, the removal of these areas is expected to reduce the numbers of burrowing owls that nest at the airfield in future years.
- Infields W9 and W12 would each be fragmented into three smaller infields as part of the creation of a new taxiway in this area. These infields support burrowing owl nesting, roosting, and foraging habitat, and they represent the largest areas of contiguous grassland habitat that have been used for nesting by owls in recent years (Figure 4.4-2). Infield W9 has historically supported nesting burrowing owls since 2011, and infield W12 has supported nesting owls since 2013. Further, squirrel control is currently not performed in the interior of infield W12, and this area thus is of greater value to owls compared to other infields due to the potential for greater burrow availability. Because these areas are of high value to owls due to their large size, have been historically used by owls, and continue to be occupied by multiple pairs of owls, the fragmentation of these areas is expected to reduce the numbers of burrowing owls that nest at the airfield in future years.
- Narrow strips of infields W10 and W11 would be removed as part of creation of a new taxiway in this area under the Project. These areas currently support nesting, roosting, and foraging habitat for burrowing owls, and owls were known to nest in these infields as recently as 2018.

Because the impact areas are relatively small compared to the size of the infields, the removal of this habitat would not substantially reduce the value of these infields as nesting, roosting, and foraging habitat for owls, and owls are expected to continue to use infields W10 and W11 following the creation of the new taxiway.

- The existing Runway Safety Area (RSA) around Runway 11-29 would not be needed due to the proposed removal of that runway by the Project. Therefore, owls would no longer be evicted from burrows within the RSA (a total of 11.9 acres) outside of the nesting season, although California ground squirrel control would still occur here. This would provide some future benefit to owls that may nest, roost, and forage in the remaining grassland infill areas adjacent to existing Runway 11-29.
- The Project would permanently remove 19.9 acres (35.5%) of management areas at the airfield, leaving a remaining total of 36.1 acres of management areas on the airfield and an 8.9-acre management area at the VOR site following the construction of the Project.

A summary of existing habitat acreages, extent of impacts, and available mitigation is provided in Table 4.4-2. Collectively, these impacts would permanently remove habitat that is important to the Airport's resident population of owls and are expected to result in a reduction in the number of pairs of owls that nest on the airfield in future years. Based on the number and locations of owls that have nested in the Project impact areas over the past three years, it is anticipated that Project activities would cause habitat loss that may then result in the loss of three nesting pairs from the Airport's subpopulation as a result of the permanent removal or fragmentation of infields W9, W12, W14, and W15.

Table 4.4-2 Summary of Burrowing Owl Impact Acreages at the Airport

	Airfield Acreages			**VOR Acreages**
	Existing Conditions	Project Impacts	Future Conditions	Existing Conditions (no impacts at VOR Site)
Burrowing Owl Habitat				
Nesting/Roosting:	115.9 acres	32.4 acres (27.9%)	83.4 acres	0.0 acres
Foraging:	132.9 acres	2.1 acres (1.6%)	130.9 acres	23.6 acres
Total:	248.8 acres	34.5 acres (13.9%)	214.3 acres	23.6 acres
Burrowing Owl Management Areas[1]:	56.0 acres	19.9 acres (35.5%)	36.1 acres	8.9 acres

[1]The burrowing owl management areas include some nesting/roosting and foraging habitat, and hence are not additive with the other acreages in the table.

Source: HT Harvey & Associates, 2019.

These impacts would further result in a reduction in reproductive effort as the displaced owls are forced to disperse to other areas to nest, and suitable nesting habitat in the region may be sufficiently limited that these owls may be relegated to lower-quality habitat. Displaced owls (estimated at up to three pairs total, as discussed above) would not be able return to the habitat they formerly occupied and establish sustainable nesting territories due to the reduction in habitat area at the airfield.

The increase in aircraft operations under the Project is expected to increase the disturbance of owls that occupy the airfield. However, the owls that occur on the airfield are acclimated to the existing high levels of disturbance, which currently fluctuates throughout the day, week, and year based on demand. Due to the owls' resiliency for these high levels of disturbance, demonstrated by their continued persistence within grassland infields along runways at the airfield, an increase in noise and visual disturbances is not expected to affect the owls' continued presence at the airfield.

Burrowing owls have high site fidelity, and at least some of the owls that currently nest on the airfield are likely to attempt to nest in remaining habitat areas following the implementation of the Project. However, in addition to the loss of habitat supporting up to three pairs of owls, as described above, we anticipate that the airfield as a whole would support fewer pairs of nesting owls over the long term due to a reduction in the value of the remaining owl nesting, roosting, and foraging habitat compared to existing conditions. The remaining habitat would be more isolated within smaller infields, which may reduce owls' use of those infields. Edge effects, which occur where lower-quality habitat is present along infield edges compared to the interiors, are expected to increase following the fragmentation and reduction in size of occupied infields. Owls nesting and roosting near infield edges would be located closer to disturbances from humans and aircraft and are more likely to need to be excluded from burrows due to higher-intensity squirrel control along pavement edges (which is regularly performed to prevent damage to pavement). These owls may also be more vulnerable to collisions with aircraft due to their closer proximity to runways and taxiways. Reducing the size of infields would increase the proportion of remaining infield habitat that is subject to these edge effects, thereby lowering overall habitat quality for owls. As a result of these combined effects, the 83.4 acres of burrowing owl nesting, roosting, and foraging habitat that would remain southwest of Runway 12R-30L following Project implementation are likely to support even fewer than three nesting pairs. The regional decline of the species is anticipated to further reduce the number of pairs of owls that nest at the Airport over the 20-year Project term.

In addition, the owls inhabiting the airfield would be subject to increased mortality as a result of increased collisions with aircraft as growth at the Airport continues. Specifically, when compared to 2018 conditions, the City is projecting a 37% increase in aircraft operations by 2037. California ground squirrels are controlled more intensively along runways compared to other portions of the airfield, and owls are evicted from Runway Safety Areas outside the nesting season to reduce the number of owl collisions with aircraft. Nevertheless, owls regularly nest within the Runway Safety Areas (Figure 4.4-2). Further, the removal and fragmentation of owl nesting areas in the southwest portion of the airfield may result in an increase in owl use of infields W2, W3, W4, W5, W6, and W7, which are located adjacent to Runway 12R-30L. As a result, the Airport's owl population is expected to experience an increase in collisions with aircraft as a result of both the increase in aircraft operations and, possibly, the owls' increased reliance on infields near runways following Project implementation. An average of 5.0 annual burrowing owl collisions with aircraft have been reported at the Airport over the most recent three years for which data are available. The number of burrowing owl collisions with aircraft may increase commensurate with the increase in aircraft operations (i.e., approximately 37%) as a

result of Project implementation, which would increase the average number of strikes to approximately 6.8 owls per year (i.e., a~~n~~ potential increase of 1.8 individuals killed annually, on average).

The permanent removal of 32.4 acres of nesting habitat, the direct loss of habitat supporting up to three nesting pairs of owls, and degradation of remaining habitat (potentially resulting in the further loss of nesting burrowing owls) represent significant impacts on the regional population of burrowing owls in San José. As the availability of grassland habitat used for nesting in the South San Francisco Bay Area continues to dwindle because of development, the South Bay nesting population of burrowing owls faces extirpation caused by lack of sufficient suitable nesting habitat and nesting-season foraging habitat, isolation from other populations and habitat areas, and demographic effects (such as difficulty in finding mates and inbreeding resulting from low population sizes. Therefore, impacts on occupied nesting habitat and loss of nesting pairs of burrowing owls would contribute to (and possibly exacerbate) the broader-scale decline in regional burrowing owl populations, which represents a significant impact under CEQA due to the downward trajectory in this species' population in the region in recent decades. In addition, due to the rarity of the burrowing owl in the region and the effects on the South Bay burrowing owl population of the loss of any individuals, the degradation of the remaining 83.4 acres of nesting and roosting habitat at the airfield, as well as the increased annual loss of individual burrowing owls due to aircraft collisions, would be significant under CEQA.

The implementation of MM BIO-1.11 below would address the direct loss of habitat, the degradation of remaining habitat, and increased impacts due to owl collisions with aircraft as a result of the proposed Project by providing nesting, roosting, and foraging habitat for owls elsewhere in the South Bay to help increase their numbers in the region. This mitigation would be sufficient to ensure the improved long-term viability of nesting burrowing owls in the South Bay by providing additional areas of suitable habitat and facilitating the expansion of owl populations in reserve areas to off-set the numbers of owls killed each year at the Airport. Assuming that at least one pair remains nesting at the Airport, and that lands provided as compensatory mitigation support up to five pairs, this mitigation would ensure that the Airport's contribution to regional populations would not be reduced as a result of Project activities.

Some of the burrowing owls that occur at the Airport during the nonbreeding season likely represent migrants or wintering owls from nesting populations outside the San Francisco Bay area. Project activities would also result in a reduction in habitat for these birds. However, burrowing owls are known to occur more widely in the South San Francisco Bay region in winter than they do during the nesting season, using habitats within Coyote Valley and adjacent foothills that are not used for nesting by birds within the South Bay nesting population.[101] Given the vast extent of grassland and ruderal habitat within the foothills of the Diablo Range and Santa Cruz Mountains (and to some extent on the valley floor in southern Santa Clara County) that provide suitable wintering habitat for owls, the loss of habitat at the Airport resulting from the Project is not expected to have a substantial impact on populations of burrowing owls that winter in the South Bay but nest outside the region.

Impacts from projects under the Project may directly affect individual burrowing owls during construction activities. Because they roost underground, burrowing owls (especially adults in burrows)

[101] ICF International. 2012. Final Santa Clara Valley Habitat Plan. August. Prepared for the City of Gilroy, City of Morgan Hill, City of San José, County of Santa Clara, Santa Clara Valley Transportation Authority, and Santa Clara Valley Water District.

may be killed or injured during development activities from trampling by construction personnel or equipment. Construction activities that occur in close proximity to active burrows may disturb owls to the point of abandoning their burrows. In addition, clearing and grading could result in the direct loss of individuals through the disturbance of grassland areas that support ground squirrel burrows. Due to the rarity of the burrowing owl in the region and the effects on burrowing owl populations of the loss of any individuals, the loss of individual burrowing owls or active burrowing owl burrows would be significant under CEQA.

The implementation of the mitigation below would reduce the impacts of the Project on burrowing owls to less than significant levels.

MM BIO-4.1: Provide Compensatory Mitigation for Permanent Impacts on Burrowing Owl Nesting Habitat. Compensatory mitigation shall be provided for permanent loss of 32.4 acres of occupied burrowing owl nesting habitat, as well as for the degradation of the remaining 83.4 acres of nesting and roosting habitat at the airfield and the expected increase in annual mortality of burrowing owls due to collisions with aircraft following Amendment implementation. Compensatory mitigation shall be provided via the payment of VHP burrowing owl fees for all 32.4 acres of direct, permanent impacts on occupied habitat.

Because the Airport is located within the Habitat Plan area, even though airport improvement projects are not considered "covered activities" under the Habitat Plan, the payment of Habitat Plan burrowing owl fees would be appropriate in lieu of providing on-site and/or off-site mitigation. This mitigation approach would be consistent with the Voluntary Fee Payments Policy of the Santa Clara Valley Habitat Agency, which states that such voluntary burrowing owl fees paid as mitigation "will be applied toward burrowing owl management agreements, burrowing owl habitat management and monitoring, as well as burrowing owl habitat restoration and land acquisition." Payment of the full, per-acre Habitat Plan burrowing owl fee for all 32.4 acres of direct permanent impacts would satisfy MM BIO-4.1.

Compensatory mitigation for impacts to burrowing owls (i.e., payment of VHP burrowing owl fees) may be phased in accordance with phasing of impacts, so that the amount of mitigation provided for a phased Project activity equals or exceeds that required based on the acreage of burrowing owl habitat impacted~~s~~ by that activity; the mitigation for impacts of a given phased Project activity shall be provided prior to those impacts occurring. ~~However, compensatory mitigation for impacts to a certain acreage of burrowing owl habitat must be implemented prior to those impacts occurring.~~

MM BIO-4.2: Update and Implement the BOMP. The existing BOMP was developed based on 1997 site conditions and owl management and monitoring methodologies. To improve management for burrowing owls at the Airport, the Airport will implement the following updates to Section 3.2 of the BOMP:

- Conduct Preconstruction Surveys for Burrowing Owls. The existing BOMP requires preconstruction surveys for burrowing owls and suitable owl burrows prior to ground-disturbing activities, with one survey occurring during the prior fall/winter season and one survey occurring within 30 days of the start of construction. However, if the preconstruction survey is conducted 30 days in advance of the proposed activity, there is some potential for owls to change locations between the survey and the activity and potentially occur within the ground disturbance area, or close enough to this area to be disturbed by the activity. In order to ensure that take avoidance measures are successful, the BOMP will be updated to require preconstruction surveys to be conducted per Habitat Plan survey requirements for take avoidance, which represent the latest methodology that is accepted by resource agencies.

  Preconstruction surveys for burrowing owls would be conducted prior to the initiation of all Project construction activities within suitable burrowing owl nesting and roosting habitat (i.e., ruderal grassland habitat with burrows of California ground squirrels) at the airfield, or within 250 feet of this habitat. During the initial site visit, a qualified biologist would survey the entire activity area and (to the extent that access allows) areas within 250 feet by walking transects with centerlines no more than 50 feet apart and ensure complete visual coverage and looking for suitable burrows that could be used by burrowing owls for nesting or roosting. If no suitable burrowing owl habitat (i.e., ruderal grasslands with burrows of California ground squirrels) is present, no additional surveys are required. If suitable burrows are determined to be present within 250 feet of the work area, a qualified biologist would conduct a minimum of two additional surveys to determine whether owls are present in areas where they could be affected by proposed activities. The surveys would last a minimum of three hours, beginning one hour before sunrise and continuing until 2 hours after sunrise or beginning 2 hours before sunset and continuing until 1 hour after sunset. Additional time may be required if the work area is very large. The first survey may occur up to 14 days prior to the start of construction activities in any given area, and the final survey would be conducted within two days prior to the start of construction activities.

- Implement Buffer Zones for Burrowing Owls. The existing BOMP does not include the option to maintain disturbance-free buffers around active owl burrows (rather, the eviction of owls from burrows within and near work areas is assumed). This measure will minimize project impacts on owls by providing the option to avoid owl burrows, rather than requiring the eviction of any owls that may be present near work areas.

  If burrowing owls are detected during the pre-activity survey, a 250-foot buffer, within which no newly initiated construction-related activities would be permissible, would be maintained between construction activities and occupied burrows. Owls present between February 1 and August 31

would be assumed to be nesting, and the 250-foot protected area would remain in effect until August 31.

- Monitor Owls During Construction. If maintaining a 250-foot buffer around active owl burrows is not feasible, the buffer may be reduced if (1) the nest is not disturbed, and (2) the City develops an avoidance, minimization, and monitoring plan that would be reviewed and approved by CDFW and USFWS prior to project commencement. The plan would include the following measures:

    - A qualified biologist would monitor the owls for at least three days prior to construction as well as during construction.
    - If the biologist observes no change in the owls' nesting and foraging behavior, construction activities may proceed.
    - If changes in the owls' behaviors as a result of work activities are observed, activities would cease within 250 feet of the active burrow location(s). Work activities may resume when the burrows are no longer occupied. If monitoring indicates that the burrow is no longer in use by owls, the disturbance-free buffer may be removed.

- Passive Relocation[102]**.** If construction activities would directly impact occupied burrows, a qualified biologist would passively evict owls from burrows during the non-nesting season (September 1 to January 31). No burrowing owls would be evicted during the nesting season (February 1 through August 31) except with CDFW's concurrence that evidence demonstrates that nesting is not actively occurring (e.g., because the owls have not yet begun nesting early in the season, or because the young have already fledged late in the season). Eviction would occur through the use of one-way doors inserted into the occupied burrow and all burrows within impact areas that are within 250 feet of the occupied burrow (to prevent occupation of other burrows that would be impacted). One-way doors would be installed by a qualified biologist and left in place for at least 48 hours before they are removed. The burrows would then be backfilled to prevent re- occupation. Although relocation of owls may be necessary to avoid the direct injury or mortality of owls during construction, relocated owls may suffer predation, competition with other owls, or reduced health or reproductive success as a result of being relegated to more marginal habitat. However, the benefits of such relocation, in terms of avoiding direct injury or mortality, would outweigh any adverse effects.

[102] The passive relocation of burrowing owls is not currently permitted under the VHP because a positive growth trend in the owls' regional population has not yet been achieved. However, passive relocation is included here as a mitigation measure here because (1) Airport projects are not covered under the VHP, and (2) the proposed Amendment improvements are necessary to address aviation safety concerns at the Airport.

- Compensatory Mitigation. Because the number of burrows that are present on the airfield does not appear to limit the existing population of owls at the airfield, compensatory mitigation for the eviction of owls for would be provided as described in MM BIO-4.1 above rather than on a case-by-case basis each time an owl is evicted from a burrow. This mitigation would maintain sufficient numbers of burrows in the mitigation areas over the long term to provide habitat for any owls that may be evicted from the airfield as a result of the Project.

The City would continue to implement the BOMP with the updates described above. **(Less Than Significant Impact with Mitigation)**

Nitrogen Deposition Impacts to Bay Checkerspot Butterfly/Serpentine Habitat

Impact BIO-5:	**The Project would have a substantial adverse effect on habitat utilized by the Bay checkerspot butterfly. Mitigation is included in the Project for this impact. (Less Than Significant Impact with Mitigation)**

USFWS has identified critical habitat for the federally threatened Bay checkerspot butterfly (73 FR 50406) south of US 101 and Yerba Buena Road in San José, approximately seven miles southeast of the Airport. The conservation of critical habitat is considered essential for the conservation of a federally listed species. Critical habitat for the Bay checkerspot butterfly occurs on extensive areas of nutrient-poor serpentine or serpentine-like grasslands that support at least one of the three butterfly's larval host plants, California plantain, dense flower owl's clover, and purple owl's clover. Non-native grasses have been reported to increase in these habitats, crowding out the native forbs needed by the Bay checkerspot butterfly, due to increased nitrogen deposition from human sources throughout San José and the greater Bay Area.

Nitrogen deposition contribution estimates in Santa Clara County were made as a part of the development of the Santa Clara Valley Habitat Plan (Appendix E of the Habitat Plan, 2012).[103] About 46 percent of nitrogen deposition on habitat areas of concern for the base years (2005-2007) was estimated to come from existing development and traffic generated locally within the Habitat Plan study area, which includes all of San José. The remainder of Santa Clara County was estimated to contribute a substantially smaller amount (17 percent of the nitrogen deposition) while the other eight Bay Area counties account for about 11 percent. Nitrogen deposition modeling completed for future years (2035 and 2060) as a part of the Habitat Plan process assumed that urban and rural development in the County and broader San Francisco Bay Area is expected to increase air pollutant emissions due to an increase in passenger and commercial vehicle trips and other new industrial and nonindustrial sources.

Many activities associated with the Airport produce nitrogen oxides (NO_x). Sources of NO_x emissions include aircraft, ground service equipment, auxiliary power units, ground traffic, and boilers. These emissions contribute to the deposition of nitrogen on serpentine habitats from sources throughout the Bay Area, resulting in the above-described impacts.

[103] https://scv-habitatagency.org/DocumentCenter/View/113/Appendix-E-Nitrogen-Deposition-Contribution-Estimates

As described in Section 3, activity levels at the Airport are projected to increase between 2018/baseline and year 2037. As an example, annual passenger levels are projected to increase from 14.3 million to 22.5 million during that timeframe. As quantified in Section 4.3, this increased activity will result in an increase in NO_x emissions, which in turn will contribute to the significant effects of nitrogen deposition from regional development on the serpentine grassland ecosystem. **(Significant Impact)**

To mitigate for this effect on serpentine habitat, a conservation strategy in the Habitat Plan includes collection of fees within the Habitat Plan area based upon the generation of new vehicle trips to fund acquisition and management of serpentine grasslands in the Coyote Ridge area. The goal of this strategy is to improve the viability of existing Bay checkerspot butterfly populations, increase the number of populations, and expand the geographic distribution to ensure the long-term persistence of the species in the Habitat Plan area.

A nexus study was completed for the Habitat Plan to assist with identifying appropriate fees to fund measures in the Habitat Plan. The nitrogen deposition fee was calculated and adopted based on Habitat Plan costs related to mitigating the impacts of airborne nitrogen deposition from covered activities in the Habitat Plan area. The amount of the fee is based on the number of new daily vehicle trips generated by a covered activity. The fee-per-vehicle-trip is a surrogate that captures the overall effects of a project, recognizing that vehicle trips are not the only source of a project's NO_x emissions.

MM BIO-5.1: Although the Airport is owned and operated by the City of San José, a Local Partner in the Habitat Plan, and the Airport is located within the boundaries of Habitat Plan area, improvement projects at the Airport are excluded as covered activities under the Habitat Plan. Irrespective of this fact, the City as CEQA Lead Agency acknowledges the nitrogen deposition impacts of the Project and is committing to pay the nitrogen deposition fee that applies to covered activities, based on new daily vehicle trips. [Note: Per Table 6 in the traffic analysis prepared as part of this EIR, the Project will generate 29,332 new daily vehicle trips.] According to the Santa Clara Valley Habitat Agency, the fees collected from covered activities do not fully cover the costs related to mitigating nitrogen deposition impacts due to new development. Therefore, the Habitat Agency accepts fees from non-covered activities and states that "nitrogen deposition voluntary fee payments will be applied toward land acquisition, management, and monitoring for Bay checkerspot butterfly and serpentine covered plant species."[104] **(Less Than Significant Impact with Mitigation)**

Impacts to Special-Status Fish

Impact BIO-6:	**The Project would not have a substantial adverse effect on special status fish species. (Less Than Significant Impact)**

No direct impacts to the Guadalupe River, which runs adjacent to the Airport, will occur under the Project. Indirect impacts on water quality in the river could potentially occur as a result of project activities at Economy Lot 1, which is located immediately adjacent to the Guadalupe River above the

[104] Source: Santa Clara Valley Habitat Agency, *Voluntary Fee Payments Policy*, November 2014.

top of bank. No indirect impacts on the Guadalupe River or water quality within the channel are expected to occur as a result of activities at the Fuel Farm, which are separated from the river by an approximately five-foot tall levee (e.g., any fuel leaks or spills at the fuel farm would be well contained by that levee and other measures that would prevent groundwater contamination).

Project activities at Economy Lot 1 may similarly result in effects on the Central California Coast steelhead and Central Valley fall-run Chinook salmon in the Guadalupe River due to a temporary increase in erosion, sedimentation, and turbidity in aquatic habitats located downstream of the work area. Additionally, minor spills of petrochemicals, hydraulic fluids, and solvents may occur during vehicle and equipment refueling. Such leaks/spills could adversely affect water quality downstream of construction activities. Compliance with standard permit conditions to protect water quality, as described in Section 4.10.1.2, would minimize the potential for impacts to water quality due to increases in erosion, sedimentation, and turbidity as well as releases of pollutants into the creek water. These measures would also minimize the release or pollutants to waters in the Guadalupe River, thereby protecting water quality in the river. Therefore, activities at Economy Lot 1 are not expected to result in substantial adverse indirect effects on special-status fish species in the Guadalupe River.

Thus, with compliance with standard permit conditions, potential project impacts on water quality and special-status fish species would be less than significant. **(Less Than Significant Impact)**

Impacts to Nonbreeding Special-Status Birds and Mammals

Impact BIO-7:	**The Project would not have a substantial adverse effect on non-breeding birds and mammals. (Less Than Significant Impact)**

Several special-status bird and mammal species occur in the study area as nonbreeding migrants, transients, or foragers, but they are not known or expected to breed or occur in large numbers within or near the Project impact areas. These are the tricolored blackbird, Bryant's savannah sparrow, grasshopper sparrow, American peregrine falcon, golden eagle, and pallid bat.

The tricolored blackbird (a state threatened species) is not expected to occur in the study area as a breeder due to the absence of suitable breeding habitat, but individuals may occur occasionally as foragers during the nonbreeding season. Bryant's savannah sparrow (a California species of special concern) breeds in marshes along the San Francisco Bay to the north, and individuals may forage in ruderal grassland on the site during the nonbreeding season. Similarly, the grasshopper sparrow (a California species of special concern) breeds in expansive grassland habitats in the foothills, and individuals may occasionally forage in grasslands in the study area during migration. The American peregrine falcon and golden eagle (state fully protected species) are not expected to breed in the study area due to a lack of suitable nesting habitat. Individuals of these species occasionally forage in the study area in small numbers. The pallid bat (a California species of special concern) may be present in the study area as an occasional forager, but is not expected to breed in the study area due to a lack of suitable habitat, and there are no known maternity colonies on or adjacent to the site. Nevertheless, individuals from more remote colonies could potentially forage over the open grasslands on the site on rare occasions.

Activities under the proposed Project would have some potential to impact foraging habitats and/or individuals of these species. Construction activities might result in a temporary direct impact through

the alteration of foraging patterns (e.g., avoidance of work sites because of increased noise and activity levels during maintenance activities) but would not result in the loss of individuals, as individuals of these species would fly away from any construction areas or equipment before individuals could be injured or killed. Further, the study area does not provide important foraging habitat used regularly or by large numbers of individuals of any of these species. As a result, impacts under the Project would have little impact on these species' foraging habitat and no substantive impact on regional populations of these species. Therefore, this impact would be less than significant.

Special-status birds that occur on the airfield would be subject to increased mortality as a result of increased collisions with aircraft as growth at the Airport continues. Specifically, when compared to 2018 conditions, the City is projecting a 37% increase in aircraft operations by 2037. However, larger birds, including an American peregrine falcons and golden eagle, are discouraged from occupying the airfield (and even removed by the USDA, if deemed necessary). Further, the regular mowing of vegetation on the airfield as well as the control of California ground squirrels reduces available small mammal prey for golden eagles; invertebrate prey for tricolored blackbirds, Bryant's savannah sparrows, grasshopper sparrows, and pallid bats; and avian prey for American peregrine falcons, and the airfield thus does not provide high-quality foraging habitat for any of these species. As a result, limited numbers of these species are expected to occur on the airfield over the long-term, and although collisions of individual golden eagles, peregrine falcons, tricolored blackbirds, Bryant's savannah sparrows, and pallid bats could increase following Project implementation, the impact on these species' populations is expected to be minimal. **(Less Than Significant Impact)**

Impacts to Breeding Special-Status Birds

Impact BIO-8:	**The Project would not have a substantial adverse effect on breeding birds. (Less Than Significant Impact)**

The yellow warbler and San Francisco common yellowthroat (California species of special concern) could potentially nest immediately adjacent to the Project impact areas located at the Fuel Farm and Economy Lot 1. The yellow warbler may nest in riparian trees along the Guadalupe River, and San Francisco common yellowthroat may nest in herbaceous riparian vegetation along the Guadalupe River. The white-tailed kite (a state fully protected species) and loggerhead shrike (a California species of special concern) may nest in trees or shrubs within or adjacent to grassland habitats at the VOR site in the study area, and individuals may forage in grasslands throughout the study area year-round. These four species are assessed together because the potential impacts of the proposed Project on these species would be similar.

Based on site observations, the areal extent of the reaches of the Guadalupe River adjacent to the Fuel Farm and Economy Lot 1, and known nesting densities of yellow warblers and San Francisco common yellowthroats, it is likely that no more than one to two pairs each of these species could potentially nest immediately adjacent to these impact areas. The Project would not result in the loss of suitable nesting or foraging habitat for the yellow warbler and San Francisco common yellowthroat, as no activities are proposed within the bed and banks of the Guadalupe River. However, activities that occur during the nesting season and cause a substantial increase in noise or human activity near active nests may result in the abandonment of active nests (i.e., nests with eggs or young). In addition, heavy ground disturbance, noise, and vibrations caused by project activities could potentially disturb nesting and foraging individuals and cause them to move away from work areas.

However, because the number of nesting pairs that could be disturbed is very small (i.e., one to two pairs of each species), the Project would impact a very small fraction of the regional population of these species. Therefore, neither the potential loss of individual yellow warblers and common yellowthroats nor the disturbance of nesting and foraging habitat would rise to the CEQA standard of having a *substantial* adverse effect, and these impacts would thus not constitute a significant impact on these species or their habitat under CEQA.

Based on the extent of occurrence at the VOR site, as well as known nesting densities of white-tailed kites and loggerhead shrikes, it is likely that no more than one pair of each of these species could potentially nest within or immediately adjacent to one of these areas. The Project would not result in the loss of suitable nesting habitat for these species; however, the removal of trees and modification of habitat as part of mitigation for burrowing owl impacts (see discussion on burrowing owls below) may result in the destruction or abandonment of an active nest of these species. In addition, heavy ground disturbance, noise, and vibrations caused by mitigation activities could potentially disturb nesting and foraging individuals and cause them to move away from work areas. However, because the number of nesting pairs that could be present is very small, the impacts of habitat mitigation at the VOR site would represent a very small fraction of the regional population of these species. Thus, neither the potential loss of individual white-tailed kites and loggerhead shrikes, the potential loss or disturbance of active nests, nor the disturbance foraging habitat would rise to the CEQA standard of having a *substantial* adverse effect, and these impacts would not constitute a significant impact on these species or their habitat under CEQA.

Yellow warblers and San Francisco common yellowthroats are associated with riparian habitats, and these species are not expected to occur on the airfield or collide with aircraft frequently. However, any white-tailed kites and loggerhead shrikes that might forage on the airfield would be subject to increased mortality as a result of increased collisions with aircraft as growth at the Airport continues. Specifically, when compared to 2018 conditions, the City is projecting a 37% increase in aircraft operations by 2037.

However, larger birds, including white-tailed kites, are discouraged from occupying the airfield (and even removed by the USDA, if deemed necessary). The regular mowing of vegetation on the airfield reduces available prey for white-tailed kites and loggerhead shrikes, and the airfield thus does not provide high-quality foraging habitat for either of these species. As a result, limited numbers of these species are expected to occur on the airfield over the long-term, and although collisions of individual white-tailed kites and loggerhead shrikes could increase following project implementation, the impact on these species' populations is expected to be minimal. **(Less Than Significant Impact)**

Impacts to the Western Pond Turtle

Impact BIO-9:	**The Project would not have a substantial adverse effect on the western pond turtle. (Less Than Significant Impact)**

The study area does not provide important or extensive habitat that is used regularly or by large numbers of western pond turtles and is not relied upon by breeding individuals of this species. Thus, the Project would not result in impacts to any habitat that is useful to western pond turtles as nesting, foraging, or dispersal habitat. The Project could potentially result in the injury or mortality of small

numbers of individual pond turtles due to worker foot traffic, equipment use, or vehicle traffic. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals. Additionally, increases in human presence and activity in the vicinity of suitable habitat during construction may result in an increase in native and non-native predators that would be attracted to trash left at the work site.

The above potential impacts notwithstanding, due to the small number of pond turtles that occur along the Guadalupe River, and an even smaller number of individuals that can potentially disperse across the study area, few, if any, western pond turtles are expected to be impacted by the Project. The potential loss of individual pond turtles as a result of the Project would not constitute a significant impact on this species under CEQA. **(Less Than Significant Impact)**

4.4.2.2 *Impacts on Riparian Habitat and Sensitive Natural Communities*

Impact BIO-10:	**The Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS. (Less Than Significant Impact)**

While no sensitive habitats as defined by CDFW or USFWS fall within the impact footprint, they are present adjacent to the Airport. The Guadalupe River flows from south to north along the length of the project footprint, and in some areas its riparian zone comes within 30 feet of the impact footprint. Therefore, there is the potential for indirect effects to occur on riparian areas adjacent to the project footprint, if runoff from Airport projects increase in intensity or frequency. However, pursuant to City Council Policy 6-29 and the City's Grading Ordinance, and as discussed in Section 4.10, *Hydrology & Water Quality*, the Project will implement construction period BMPs and post-construction stormwater treatment measures. These measures would avoid and reduce these potential impacts to a less than significant level. **(Less Than Significant Impact)**

4.4.2.3 *Impacts to Wetlands*

Impact BIO-11:	**The Project would not 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. (No Impact)**

No wetland habitat is present within or adjacent to the study area, and thus none would be impacted directly or indirectly by the Project. **(No Impact)**

4.4.2.4 *Impacts to Wildlife Movement*

Impact BIO-12:	**The Project would not 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 Impact)**

The Guadalupe River and the associated riparian corridor provides an important movement pathway for both aquatic and terrestrial wildlife species, connecting the associated wetlands to the San Francisco Bay. The Project would not result in any loss of aquatic, wetland, or riparian habitat along the Guadalupe River or in any substantial reduction in the value of the Guadalupe River corridor for wildlife movement. Thus, aquatic and terrestrial species would continue to be able to move north to south along the Guadalupe River following development under the Project. Therefore, the Project would not 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, and this impact is determined to be less than significant. **(Less Than Significant Impact)**

4.4.2.5 *Conflicts with Local Plans and Policies that Protect Biological Resources*

Impact BIO-13:	**With the mitigation measures included in the Project, the Project would not conflict with any local policies or ordinances protecting biological resources. (Less Than Significant Impact with Mitigation)**

Impacts Due to Encroachment Within Riparian Buffer of the Guadalupe River

As noted previously in Section 4.4.1.1, San José's Riparian Corridor Policy protects riparian habitat by requiring a 100-foot setback from riparian corridors, measured from the outside edges of riparian habitat or the top of bank, whichever is greater. The Guadalupe River riparian corridor is located within 100 feet of the Project site.

Currently, limited development (i.e., paved vehicle and pedestrian areas without buildings) is present within all areas of the 100-foot setback at Economy Lot 1 and along Airport Boulevard in the southeastern portion of the Airport within the study area. Under the Project, development within the riparian setback could include the construction of ~~additional fuel tanks at the Fuel Farm and~~ a parking garage at Economy Lot 1. Development near the riparian buffer would include additional fuel tanks at the Fuel Farm which would be set back at least 100 feet from the Guadalupe River, outside of the riparian buffer. Constructing more intensive development (e.g., new structures) within the setback would be considered an adverse impact because of the high ecological value of the Guadalupe River as a whole (even taking into account the moderate quality of this particular reach of riparian habitat) and the degradation to that value that would occur due to encroachment.

Impacts of encroachment into the riparian buffer would be significant if new development is located any closer to the baseline than existing conditions. This baseline varies in different sections of the study area, as follows:

Implementation of the following mitigation measures, if necessary, would reduce any riparian buffer encroachment impacts to less than significant levels.

MM BIO-13.1: Detailed plans for the structures that may be constructed in or near the 100-foot riparian buffers along the Guadalupe River have not yet been prepared. However, the City will strive to design the parking garage ~~and fuel farm tanks~~ in such a way that encroachment into the riparian buffer can be avoided altogether. The fuel farm tanks shall be located outside of the riparian buffer. If the Airport needs to

encroach into the riparian buffer, then the extent to which encroachment occurs (as determined both by the distance between the proposed development and the riparian baseline and by the acreage of encroachment into the buffer) should be minimized. If encroachment is avoided, so that no new, more intensive types of development occur within 100 feet of the buffer baseline, or any closer to the buffer baseline than existing development already occurs (e.g., buildings constructed within the 100-foot setback where only paved areas are currently present), no further mitigation for riparian buffer encroachment impacts would be necessary. If any encroachment is proposed, MM BIO-13.2 would be implemented to reduce the residual impact to less than significant levels.

MM BIO-13.2: If encroachment into the riparian buffer cannot be avoided, compensatory mitigation shall be provided to offset the impacts on the ecological functions and values of the riparian corridor. Such compensatory mitigation would be provided in one of two ways:

3. At a minimum ratio of 1:1 (compensation:impact), on an acreage basis, existing development (e.g., buildings or hardscape) along the Guadalupe River, either on-site or off-site, would be removed, and the developed area restored to native habitats and dedicated to natural habitat (rather than active human uses such as urban park). For example, if a portion of the study area were subject to riparian buffer encroachment, but a commensurate acreage of existing developed areas adjoining the Guadalupe River levee in other parts of the study area were restored to native habitat, that would compensate for the riparian buffer encroachment impact.
4. At a minimum ratio of 2.5:1 (compensation:impact) on an acreage basis, riparian woodland habitat would be restored or created as described below to provide ecological functions and values that offset those lost due to riparian buffer encroachment.

To compensate for encroachment into the riparian buffer, riparian woodland habitat would be restored or created at a minimum ratio of 2.5:1 (compensation:impact) on an acreage basis, based on canopy area. This ratio is not higher due to the moderately high quality of the riparian woodland adjacent to the study area relative to more extensive, less fragmented riparian woodland elsewhere in the region, but is not lower due to the temporal loss of riparian functions and values that would result from the lag between impacts to the woodland adjacent to the study area and maturation of the mitigation habitat.

Compensation would be provided by planting riparian habitat so as to achieve the 2.5:1 ratio somewhere in the Santa Clara Valley, preferably along the Guadalupe River but along another stream if appropriate. Mitigation habitat may be hydrologically isolated from the stream in question as long as it is located within 300 feet of the stream, is not separated from the stream by development other than a trail or levee, and is dominated by native riparian trees. **(Less Than Significant Impact with Mitigation)**

Impacts Due to Bird Collisions with Buildings

Under existing conditions, terrestrial land uses and habitat conditions in the study area and in surrounding areas consist primarily of developed areas such as the Airport, commercial and residential buildings (primarily of one or two stories), parking lots, and roads. Away from the Guadalupe River, vegetation in most of the surrounding areas is absent or very limited in extent and consists primarily of non-native landscaped trees and shrubs. Non-native vegetation supports fewer of the resources required by native birds than native vegetation, and the structural simplicity of the vegetation (without well-developed ground cover, understory, and canopy layers) further limits resources available to birds. Thus, although a number of bird species would regularly use the vegetation in developed portions of the study area and surrounding developed areas, they typically do so in low numbers, and particularly rare species or species of conservation concern are not expected to occur in developed portions of the study area. As a result, the number of individual landbirds that inhabit and regularly use vegetation within developed portions of the study area at any given time is relatively low under existing conditions.

The extent and species of future landscape vegetation to be installed under the Project are unknown; however, because the study area is located at an Airport (where birds are generally discouraged due to the potential for collisions with airplanes and landscaped vegetation is accordingly minimal), any trees and landscaped areas that would be planted in the study area in the future are expected to provide similar (i.e., minimal) habitat structure and foraging opportunities for landbirds compared to existing conditions. Landbirds that would occur at the Airport and in the vicinity would be attracted to any trees and landscaped areas that are planted, and some would make use of new developed structures. These birds would move between the site and habitats in the surrounding vicinity (e.g., the riparian vegetation along the Guadalupe River). No substantive changes in the number of songbirds inhabiting developed portions of the study area are expected to result from projects under the Project.

However, riparian habitats in California, such as the habitat along the Guadalupe River that bisects the study area, generally support exceptionally rich bird communities and contribute a disproportionately high amount to landscape-level species diversity. The presence of year-round water and abundant invertebrate fauna provide foraging opportunities, and the diverse habitat structure provides cover and nesting opportunities. Due to the moderately high quality of habitat along the Guadalupe River compared to habitats in surrounding urban areas, songbirds that migrate along the Pacific Flyway disperse and forage along the Guadalupe River in relatively large number. Resident birds that are present in the vicinity year-round are similarly attracted to this riparian habitat in relatively large numbers for foraging and nesting opportunities compared to regional populations.

Project activities that would occur near the Guadalupe River include the construction of five additional fuel storage tanks on the Fuel Farm site; removal of the existing Economy Lot 1 surface parking lot and its replacement with a new public long-term parking garage with up to 6,000 spaces; construction of a new short-term parking garage and a multi-story business hotel across from Terminal B; and the removal, relocation, and/or renovation of existing facilities and construction of new facilities along Airport Boulevard. Birds using riparian habitat along the Guadalupe River, such as migrants that are initially attracted to the study area vicinity as a migratory stopover location due to the abundance of riparian vegetation, may then disperse outward from the river into vegetated areas within these newly

constructed areas. During such dispersal, some birds would move toward and onto the study area (i.e., towards the buildings) to look for feeding and resting opportunities in landscape vegetation.

The extent to which the proposed new buildings and other structures would incorporate glazing on their façades is unknown, as these structures have not yet been designed. It has been well documented that glass windows and building façades can result in injury or mortality of birds due to birds' collisions with these surfaces. Because birds do not perceive glass as an obstruction the way humans do, they may collide with glass when the sky or vegetation is reflected in glass (e.g., they see the glass as sky or vegetated areas); when transparent windows allow birds to perceive an unobstructed flight route through the glass (such as at corners); and when the combination of transparent glass and interior vegetation (such as in planted atria) results in attempts by birds to fly through glass to reach that vegetation. The greatest risk of avian collisions with buildings occurs in the area within 40–60 feet of the ground, because this is the area in which most bird activity occurs. Very tall buildings (e.g., buildings 500 feet or more high) may pose a threat to birds that are migrating through the area, particularly to nocturnal migrants that may not see the buildings or that may be attracted to lights on the buildings, but no buildings taller than 500 feet are proposed under the Project.

If newly constructed buildings and other structures within the study area have extensive glass façades, birds are likely to collide with these façades for the following reasons:

- Under the Project, it is possible that trees and other landscaping would be present immediately adjacent to a building's glass façades. Such vegetation is expected to attract birds. Once birds are using that vegetation, they may not perceive the glass as a solid structure. The vegetation would reflect in the glass of the building's façades, potentially causing birds to attempt to fly in to the reflected "vegetation" and strike the glass. As a result, some birds that are attracted to the trees and other landscaping that is adjacent to the glass façades are expected to collide with the glass.
- Night lighting associated with new buildings has some potential to disorient birds, especially during inclement weather when night migrating birds descend to lower altitudes. As a result, some birds moving through the project site at night may be disoriented by night lighting and potentially collide with buildings.

Thus, some of the birds using trees and other landscape vegetation that is to be planted within the study area in the future are expected to strike the buildings, resulting in injury or death. Building collisions are a leading cause of anthropogenic-related avian mortality in the United States, second only to predation by free-ranging domestic cats. Buildings are estimated to result in the mortality of 365 to 988 million birds per year, or 2–9% of all North American birds, with low-rise buildings such as those to be constructed under the Project accounting for the mortality of between 62 and 664 million birds per year. Most birds that are vulnerable to collisions with low-rise buildings are migrants that move through during the spring and fall. However, certain groups of birds are also more vulnerable to collisions, including hummingbirds, swifts, waxwings, warblers, nuthatches, tits, and creepers, all of which occur in the riparian habitat along the Guadalupe River either as migrants or year-round residents. Considering the close proximity of the Guadalupe River, relatively large numbers of birds compared to other areas of San José and surrounding areas can potentially be attracted to the site over the long term. As a result, construction of new buildings and structures under the Project could potentially result in the mortality of large numbers of birds relative to the size of regional populations,

and enough individuals of common bird species can potentially strike the buildings over the long term to result in a significant impact according to CEQA.

The Project will incorporate bird-safe design elements into building and structure designs, reducing this impact to a less-than-significant level.

MM BIO-13.3: Implement Bird-Safe Building Design. Due to the potential for buildings within the study area to result in high numbers of bird collisions, the Project would implement the following bird-safe building design features for all buildings constructed or modified within 300 feet of the Guadalupe River:

- The use of glass on the façades of new buildings and additions shall be minimized to the extent feasible.
- No more than 10% of the surface area of the façades of buildings that face the Guadalupe River shall have untreated glazing between the ground and 60 feet above ground. Bird-safe glazing treatments may include fritting, netting, permanent stencils, frosted glass, exterior screens, and/or physical grids placed on the exterior of glazing or ultraviolet patterns visible to birds. Vertical elements of the window patterns would be at least ¼-inch wide at a maximum spacing of 4 inches, or have horizontal elements at least 1/8-inch wide at a maximum spacing of 2 inches.
- No more than 10% of the surface area of façades facing the Guadalupe River and/or façade areas within 12 vertical feet above and/or below landscaped terraces shall have untreated glazing.
- All glazing panels at corners of façades that face the Guadalupe River between the ground and 60 feet above ground and/or within 12 vertical feet above and/or below landscaped terraces (regardless of their height above ground) would be 100% treated.
- Exterior lighting on the sides of buildings facing the Guadalupe River would be minimized to the extent feasible, except as needed for safety. All exterior lights shall be directed toward facilities on the project site (e.g., rather than directed upward or outward) and shielded to ensure that light is not directed outward towards the Guadalupe River.
- Exterior up-lighting shall not be used.
- Occupancy sensors or other switch control devices shall be installed on interior lights, with the exception of emergency lights or lights needed for safety purposes. **(Less Than Significant Impact with Mitigation)**

Tree Removal Impacts

A limited number of ordinance-sized trees and street trees are present at various locations at the Airport. Implementation of the Project would likely result in the removal of a small number of these trees. To avoid conflicts with the City's Municipal Code regarding tree removal, improvements to be constructed as part of the Project will include the following standard permit conditions:

Standard Permit Conditions

- Trees impacted by the Project would be replaced in accordance with the tree replacement ratios outlined in Table 4.4-3. The species of trees to be planted shall be determined in consultation with the City Arborist and the Department of Planning, Building and Code Enforcement.

- Where construction will occur within the dripline of a tree not being removed, the City would implement a Tree Protection Plan and include measures to implement during project construction to minimize impacts to trees to remain. The measures include marking trees to remain in place in project plans and have protection zones established around the canopy drip line zone to avoid serious injury or loss.

Table 4.4-3: City of San José Standard Tree Replacement Ratios

Diameter of Tree to Be Removed	Type of Tree to Be Removed			Minimum Size of Each Replacement Tree
	Native	Non-Native	Orchard	
18 inches or greater	5:1	4:1	3:1	24-inch box
12-18 inches	3:1	2:1	none	24-inch box
Less than 12 inches	1:1	1:1	none	15-gallon container

Notes: x:x = tree replacement to tree loss ratio; Trees greater than 18" diameter shall not be removed unless a Tree Removal Permit, or equivalent, has been approved for the removal of such trees.

In the event the project site does not have sufficient area to accommodate the required tree mitigation, one or more of the following measures would be implemented during the final design phase of any Master Plan project that removes trees, to the satisfaction of the City Arborist and the Director of Planning, Building and Code Enforcement.

- During the final design phase, the size of a 15-gallon replacement tree may be increased to 24-inch box and count as two replacement trees to be planted on the project site.

- Pay Off-Site Tree Replacement Fee(s) to the City, prior to the issuance of Public Works grading permit(s), in accordance with the City Council approved Fee Resolution. The City would use the off-site tree replacement fee(s) to plant trees at alternative sites. **(Less Than Significant Impact)**

4.4.2.6 *Conflicts with Habitat Conservation Plans*

Impact BIO-14:	**With mitigation, the Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. (Less Than Significant with Mitigation)**

As discussed previously, the Santa Clara Valley Habitat Plan (Habitat Plan) is both a habitat conservation plan and natural community conservation plan. The Habitat Plan helps private and public entities plan and conduct projects and activities in ways that lessen impacts on natural resources, including specific threatened and endangered species. It identifies regional lands (called reserves) to be preserved or restored to benefit at-risk species, and it describes how reserves would be managed and monitored to ensure that they benefit those species. In providing a long-term, coordinated planning effort for habitat restoration and conservation, the Habitat Plan aims to enhance the viability of threatened and endangered species throughout the Santa Clara Valley.

The Airport is located within the Habitat Plan permit area. However, Airport projects were excluded from the Plan's impact analysis, and projects at the Airport are not "covered projects" under the Habitat Plan. Thus, the Project is not considered a covered activity under the Habitat Plan.

Nevertheless, the Habitat Plan's conservation strategy does relate directly to the Project with respect to the burrowing owl and nitrogen deposition. As described above in Section 4.4.2.1, the Project would result in significant burrowing owl and nitrogen deposition impacts, which without mitigation would be inconsistent with the goals of the Habitat Plan. However, with the implementation of MM BIO 4.1, MM BIO-4.2, and MM BIO 5.1, the Project would be consistent with the goals of the Habitat Plan. **(Less Than Significant Impact with Mitigation)**

4.4.2.7 *Cumulative Impacts*

Impact BIO-C:	**With implementation of the mitigation measures and standard permit conditions described above, the Project would not result in a cumulatively considerable contribution to a significant biological resources impact. (Less Than Significant Cumulative Impact with Mitigation)**

The Airport is in an urbanized location where there are numerous ongoing and proposed projects, the majority of which result in various biological impacts such as tree removal. However, standard permit requirements imposed on all projects (i.e., tree replacement) avoids a significant cumulative impact because the end result is no net loss of trees. Similarly, local policies strongly discourage impacts to sensitive habitats (e.g., riparian corridors and wetlands) and where such impacts cannot be avoided, the creation of replacement habitat is mandated by various permitting agencies, thus avoiding a net loss of the resource. In addition, the Habitat Plan is a mechanism that allows projects to contribute their fair share to regional mitigation, thereby addressing cumulative effects. Finally, by the implementation of all the mitigation measures described in this section, the Project's contribution to a biological impact would not be cumulatively considerable. **(Less Than Significant Cumulative Impact with Mitigation)**

4.5 CULTURAL RESOURCES

4.5.1 Environmental Setting

4.5.1.1 *Regulatory Framework*

Federal

National Historic Preservation Act

The *National Register of Historic Places (NRHP*), established under the National Historic Preservation Act, is a comprehensive inventory of known historic resources throughout the United States. The National Register is administered by the National Park Service and includes buildings, structures, sites, objects and districts that possess historic, architectural, engineering, archaeological or cultural significance. For a resource to be eligible for listing, it also must retain integrity of those features necessary to convey its significance in terms of 1) location, 2) design, 3) setting, 4) materials, 5) workmanship, 6) feeling, and 7) association. CEQA requires evaluation of project effects on properties that are listed in or eligible for listing in the National Register.

State

California Register of Historical Resources

The *California Register of Historical Resources* (CRHR) is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The CRHR aids government agencies in identifying, evaluating, and protecting California's historical resources, and indicates which properties are to be protected from substantial adverse change (Public Resources Code, Section 5024.1(a)). The CRHR is administered through the State Office of Historic Preservation (SHPO), which is part of the California State Parks system. A historic resource listed in, or formally determined to be eligible for listing in, the National Register is, by definition, included in the California Register.[105]

State Regulations Regarding Cultural Resources

Archaeological and historical sites are protected by State policies and regulations under the California Public Resources Code, California Code of Regulations (Title 14 Section 1427), and California Health and Safety Code. California Public Resources Code Sections 5097.9-5097.991 require notification of discoveries of Native American remains and provides for the treatment and disposition of human remains and associated grave goods.

State law requires that the Santa Clara County Coroner be notified if cultural remains are found on a site. If the Coroner determines the remains are those of Native Americans, the Native American Heritage Commission (NAHC) and a "most likely descendant" must also be notified.

[105] Pub. Res. Code Section 5024.1(d)(1)

Local

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned projects within the City. The policies listed in Table 4.5-1 are specific to cultural resources and are applicable to the proposed Project.

Table 4.5-1: General Plan Policies – Cultural Resources

Policy	Description
ER-10.2	Recognizing that Native American human remains may be encountered at unexpected locations, impose a requirement on all development permits and tentative subdivision maps that upon discovery during construction, development activity will cease until professional archaeological examination confirms whether the burial is human. If the remains are determined to be Native American, applicable state laws shall be enforced.
ER-10.3	Ensure that City, State, and Federal historic preservation laws, regulations, and codes are enforced, including laws related to archaeological and paleontological resources, to ensure the adequate protection of historic and pre-historic resources.

City of San José Historic Landmarks are structures that have been determined to have a special historical, architectural, cultural, aesthetic, or engineering interest or value of an historical nature. The City of San José's Historic Resources Inventory is an inventory of potentially historical and/or architecturally significant structures. The Historic Resources Inventory serves as a resource document for future historic landmark designations and for reviewing and evaluating proposed alterations or removal of structures. There are no City Landmarks on the Airport, nor are any structures listed on the Historic Resources Inventory.

4.5.1.2 *Existing Conditions*

Airport History

The history of the Airport and the vicinity of the Airport begins with the first historic settlement in the Santa Clara Valley, which is the founding of the Mission Santa Clara on the banks of the Guadalupe River in 1777. After the secularization of the Mission, a portion of the subject lands were incorporated into Rancho El Potrero de Santa Clara and the rest of the land into Pueblo Lands of San José. Most of the area south of Brokaw Road remained as part of the large Stockton Ranch. The area north of Brokaw Road was divided into smaller parcels that ranged in size from six to one hundred acres.

Between 1940 and 1943, the City of San José purchased 483 acres of the Stockton Ranch as a site for a Municipal Airport. In 1946, the first Airport-related buildings were constructed for a flight school, California Aviation Activities. The Airport and terminal were opened in February of 1949. Between 1946 and 1961, the Airport facilities were limited to the area located between Newhall and Brokaw Roads. In 1957, the Guadalupe River was straightened and channelized, providing more usable land

for the Airport along its eastern boundaries. In 1961, the runways were extended across Brokaw Road and a new terminal building was opened in the early 1960s.

Existing Archaeological Resources

Archaeological investigations conducted for the Airport included research on the cultural resources in the Airport vicinity and an archival search of State records. This research was performed to determine the presence or absence of cultural resources at the Airport and in the Airport vicinity, and to determine the significance of any archaeological resources.

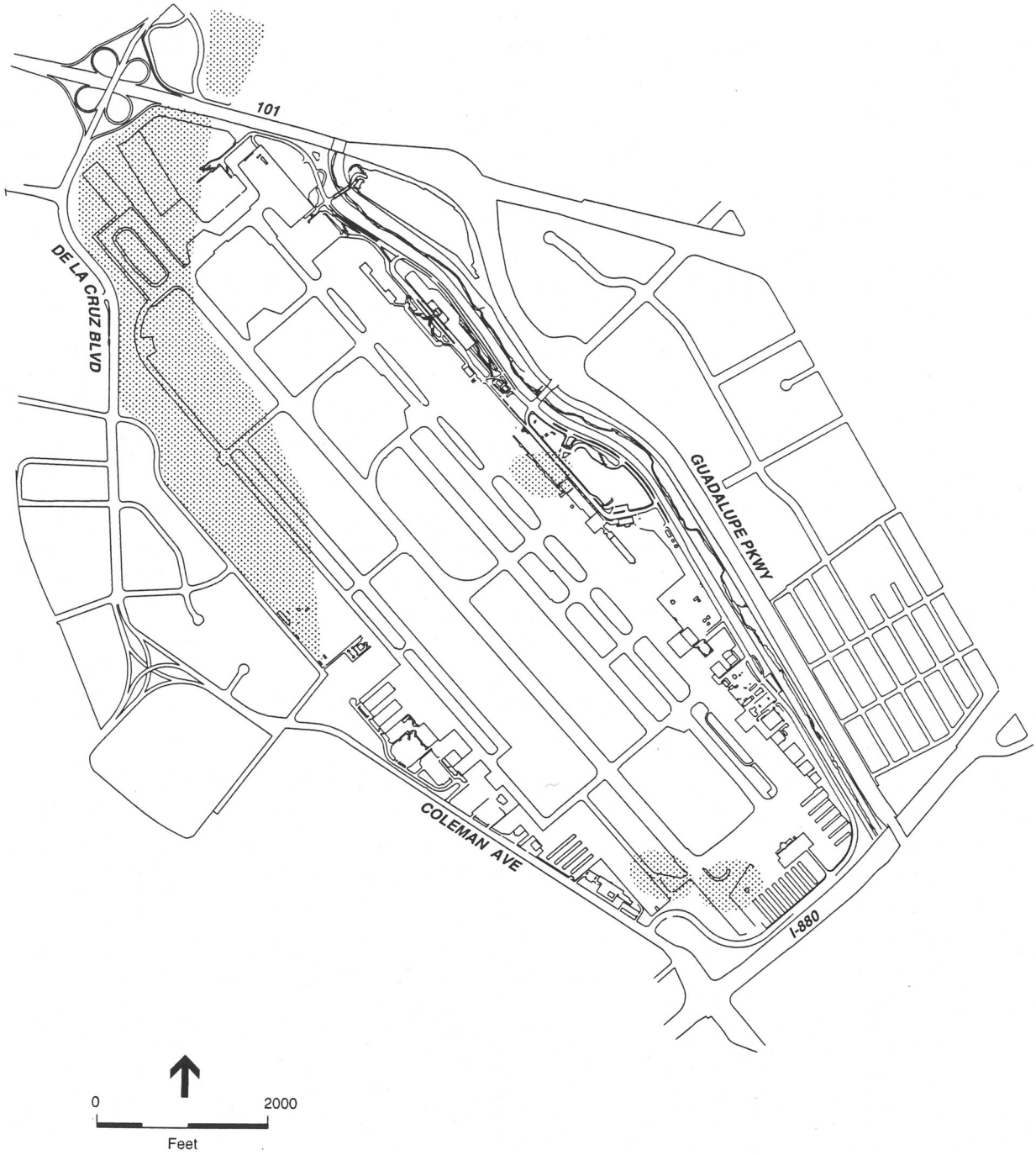
Archival research, which was conducted at the Northwest Information Center of the California Archeological Site Inventory, revealed a number of previous archeological surveys conducted in the Airport vicinity. The existing research has identified two recorded archaeological sites that are known to exist at the Airport: SCL-311H and SCL-430.

Site SCL-311H is within the northwest portion of the Airport and stretches along what was once Mission Road (now called Trimble Road) from the Guadalupe River to North First Street. Research indicates that the site of the route was established in the 1770s as the original access to Mission Santa Clara, which was reported to lie on the east side of the Guadalupe River. In addition, the area may have contained the original adobe structures that housed inhabitants adjacent to the Mission.

Site SCL-430 is a site that has been recorded in the center of the southwest edge of the Airport. Survey of the site surface revealed both historic and pre-historic artifacts. Historic artifacts found dating from the mid-1800s included bottle fragments, ceramics, and metal objects, assumed to be related to turn-of-the-century residences that were removed for Airport expansion. In addition, the site was noted to be on the edge of the old location of the early Santa Clara Mission site. Pre-historic elements encountered included projectile points, three chipped lithics, six fire cracked rocks, and two pieces of possible groundstone within a 300-acre area. The projectile points appeared to be early Middle Horizon or Early Horizon in age (more than 2,000 years old). The area appeared to be associated with hunting/butchering activities.

The most useful previous survey was the detailed cultural resources assessment that was prepared as part of the preparation of the EIR for the 1980 Airport Master Plan. This assessment included extensive subsurface testing over the entire Airport site. A total of 237 test trenches were excavated to a maximum depth of 300 cm (approximately three feet). Only three trenches yielded findings of historic nature (cut bone, glass, and metal). None of the trenches yielded pre-historic resources. The 1980 assessment also identified archaeological sensitive areas at the Airport where the likelihood of encountering buried archaeological materials during the construction of future Airport-related projects is the greatest (see Figure 4.5-1).

Since 1980, pursuant to the 1980 Master Plan EIR, established Airport policy has required that a qualified archaeologist be present during all earthmoving activities for projects located in the designated archaeological sensitive areas. Major construction projects that have been undertaken at the Airport within these archaeological sensitive areas include the extension/widening of all three runways, construction of multiple taxiways, construction of a long-term and employee parking lot, and new storm and sanitary sewer lines. During earthmoving activities associated with these projects, work was monitored by an archaeologist and no archaeological resources were encountered.



ARCHAEOLOGICALLY SENSITIVE AREAS AT SJC | FIGURE 4.5-1

Existing Historic Resources

No existing buildings at the Airport are eligible for or listed on the NRHP[106], the CRHR[107], or the City of San José Inventory of Historical Resources[108].

Existing Cultural Resources in the Airport Vicinity

None of the City of San José's designated historic districts or conservation areas are within the Airport's existing noise footprint, as defined by the 65-dB CNEL noise contour. In addition, no properties listed on the NRHP or on the CRHR are within the existing 65-dB CNEL noise contour. The City of Santa Clara's Architecturally or Historically Significant Properties list is a list of properties that have potential historical or architectural interest. No City of Santa Clara designated historic districts are within the existing 65-dB CNEL noise contour. In addition, no properties listed on the NRHP or CRHR are within the existing 65-dB CNEL noise contour.

4.5.2 Discussion of Cultural Resources Impacts

For the purpose of determining the significance of the project's impacts on cultural resources, a significant impact would occur if the project would:

1) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5
2) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5
3) Disturb any human remains, including those interred outside of dedicated cemeteries.

4.5.2.1 *Impacts to Historic Resources*

Impact CUL-1:	**The Project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5. (No Impact)**

As described in Section 4.5.1.2, there are no historical resources on or adjacent to the Airport. For this reason, the proposed Project would not impact historic resources. **(No Impact)**

[106] National Park Service. National Register of Historic Places. July 2019. Available at: https://www.nps.gov/subjects/nationalregister/database-research.htm. Accessed August 5, 2019.
[107] California State Parks. Office of Historic Preservation. Available at: http://ohp.parks.ca.gov/?page_id=21522, Accessed August 23, 2019.
[108] City of San José. Historic Resources Inventory. February 2016. Available at:http://www.sanjoseca.gov/DocumentCenter/View/35475. Accessed August 5, 2019.

4.5.2.2 *Impacts to Archaeological Resources*

Impact CUL-2:	**Portions of the Airport are considered archaeologically sensitive and therefore the construction of the Project could impact buried archaeological resources. Mitigation for this impact is included in the Project. (Less Than Significant Impact with Mitigation)**

A significant impact would occur if the Project would disturb an archaeological resource. Although previous Airport projects have not resulted in the discovery or destruction of any archaeological resources, because of the immediate proximity of the identified archaeologically sensitive areas to planned earthmoving activities, it is possible that these earthmoving activities in the archaeological sensitive areas could result in the destruction of archaeological resources.

Mitigation Measure: The following measure is included in the Project to reduce potential impacts to archaeological resources to a less than significant level.

MM CUL-2.1: The archaeological monitoring program that is currently in effect at the Airport will be continued by the City as part of the Project. Under this program, a qualified archaeologist will monitor all subsurface construction activity for the identified projects located within designated archaeological sensitive areas. If prehistoric or historic archaeological resources are uncovered during construction activities, the monitoring archaeologist will require that work be discontinued within a 100-foot radius of the find. A report evaluating the find and identifying mitigation for impacts should be prepared by the archaeologist and submitted to the City's Director of Planning, Building, and Code Enforcement and the Director of the Airport. **(Less Than Significant Impact with Mitigation)**

4.5.2.3 *Impacts to Buried Human Remains*

Impact CUL-3:	**Directly related to impact CUL-2, above, if any buried archaeological resources are impacted by the Project, such resources could contain human remains. Mitigation for this impact is included in the Project. (Less Than Significant Impact with Mitigation)**

A significant impact would occur if construction of the improvements contemplated by the Project would unintentionally uncover buried human remains.

Mitigation Measure: The mitigation measure described below will ensure that the Project has a less than significant impact.

MM CUL-3.1: In the event that human remains are discovered during excavation and/or grading of the site, all activity within a 100-foot radius of the find shall be stopped. The Santa Clara County Coroner shall be notified and make a determination as to whether the remains are of Native American origin or whether an investigation into the cause of death is required. If the remains are determined to be Native American,

the Coroner will notify the Native American Heritage Commission (NAHC) immediately. Once the NAHC identifies the most likely descendants, the descendants will make recommendations regarding proper burial, which will be implemented in accordance with Section 15064.5(e) of CEQA Guidelines. **(Less Than Significant Impact with Mitigation)**

4.5.2.4 *Cumulative Impacts*

Impact CUL-C:	**The Project would not result in a cumulatively considerable contribution to a significant cultural resources impact. (No Cumulative Impact)**

The existing cultural conditions within and adjacent to the Project site would not be exacerbated by the Project such that cultural resource conditions would be impacted or worsened. For this reason, the Project would not contribute to a cumulatively significant cultural resources impact. The two identified cultural resources are on the airport grounds. Based on a review of proposed and approved development permits, there are no projects proposed within 1,000 feet of the portions of the Airport where the resources are mapped. If projects were to be proposed in the airport vicinity, mitigation measures CUL-2.1 and CUL-3.1 would be applied to reduce impacts to a less than significant level, which would ensure there is no cumulative impact. **(No Cumulative Impact)**

4.6 ENERGY

The following discussion is based on an Energy Assessment prepared by Ramboll US Corporation in August 2019. The report is included as Appendix F to this EIR.

4.6.1 Environmental Setting

4.6.1.1 *Regulatory Framework*

Federal

At the federal level, energy standards set by the USEPA apply to numerous consumer products and appliances (e.g., the EnergyStar™ program). The USEPA also sets fuel efficiency standards for automobiles and other modes of transportation.

State

Renewables Portfolio Standard Program

In 2002, California established its Renewables Portfolio Standard Program, with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent of retail sales by 2010. In 2008, Executive Order S-14-08 was signed into law requiring retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. In 2015, SB 350 was enacted to codify California's climate and clean energy goals. A key provision of SB 350 requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable sources by 2030.

San José Clean Energy (SJCE) is the electricity provider for residents and businesses in the City of San José. SJCE sources the electricity and the Pacific Gas and Electric Company (PG&E) delivers it to customers over their existing utility lines. SJCE customers are automatically enrolled in the GreenSource program, which provides 80 percent GHG emission-free electricity. Customers can choose to enroll in SJCE's TotalGreen program at any time to receive 100 percent GHG emission-free electricity from entirely renewable sources.

Building Codes

The Energy Efficiency Standards for Residential and Nonresidential Buildings, as specified in Title 24, Part 6, of the California Code of Regulations (Title 24), was established in 1978 in response to a legislative mandate to reduce California's energy consumption. Title 24 is updated approximately every three years, and the 2019 Title 24 updates go into effect on January 1, 2020. Compliance with Title 24 is mandatory at the time new building permits are issued by city and county governments. [109]

The California Green Building Standards Code (CALGreen) establishes mandatory green building standards for buildings in California. CALGreen was developed to reduce GHG emissions from buildings, promote environmentally responsible and healthier places to live and work, reduce energy

[109] California Building Standards Commission. California Building Standards Code, Available at: https://www.dgs.ca.gov/BSC/Codes. Accessed August 25, 2019.

and water consumption, and respond to state environmental directives. The most recent update to CALGreen went into effect on January 1, 2017, and covers five categories: planning and design, energy efficiency, water efficiency and conservation, material and resource efficiency, and indoor environmental quality.

Local

Green Vision and Climate Smart San José

The Green Vision was a 15-year sustainability plan to steer economic growth and reduce greenhouse gas emissions. Through the Green Vision, adopted in 2007, the City made strides as a national leader in the sustainability movement. In 2017, the City began drafting the Green Vision's replacement, Climate Smart San José. Approved by the City Council in February 2018, Climate Smart San José builds upon the Green Vision with a people-focused approach, encouraging the entire San José community to join an ambitious campaign to reduce greenhouse gas emissions, save water, and improve quality of life.

The adoption of Climate Smart San José made San José one of the first U.S. cities to chart a path to achieving the greenhouse gas emissions reductions contained in the international Paris Agreement on climate change. Climate Smart San José focuses on three areas: energy, mobility, and water. Climate Smart San José encompasses nine overarching strategies:

- Transition to a renewable energy future
- Embrace our California climate
- Densify our city to accommodate our future neighbors
- Make homes efficient and affordable for families
- Create clean, personalized mobility choices
- Develop integrated, accessible public transport infrastructure
- Create local jobs in our city to reduce vehicle miles traveled
- Improve our commercial building stock
- Make commercial goods movement clean and efficient

Sustainable City Strategy

The Sustainable City Strategy is a statement of the City's commitment to becoming an environmentally and economically sustainable city by ensuring that development is designed and built in a manner consistent with the efficient use of resources and environmental protection. Programs promoted under this strategy include recycling, waste disposal, water conservation, transportation demand management, and energy efficiency.

Municipal Code

The City's Municipal Code includes regulations associated with energy efficiency and energy use. City regulations include a Green Building Ordinance (Chapter 17.84) to foster practices to minimize the use and waste of energy, water and other resources in the City of San José, Water Efficient Landscape Standards for New and Rehabilitated Landscaping (Chapter 15.10), requirements for Transportation Demand Programs for employers with more than 100 employees (Chapter 11.105), and

a Construction and Demolition Diversion Deposit Program that fosters recycling of construction and demolition materials (Chapter 9.10).

San José Green Building Policy - Municipal Projects

In March 2007, the San José City Council approved a revised Green Building Policy, Council Policy Manual Section 8-13, which requires the City to maximize opportunities to incorporate green building principles and practices into the planning, design, construction, management, renovation, operations, and maintenance of all new and existing facilities that are constructed, owned, or managed by the City.

City of San José Water Efficient Landscape Standards for New and Rehabilitated Landscaping

Chapter 15.11 of the Municipal Code, titled *Water Efficient Landscape Standards for New and Rehabilitated Landscaping*, promote the conservation and efficient use of water by regulating landscape design, installation, and maintenance.

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects within the City. The policies listed in Table 4.6-1 are specific to energy resources and are applicable to the proposed Project.

Table 4.6-1: General Plan Policies – Energy Conservation

Policy	Description
MS-1.1	Demonstrate leadership in the development and implementation of green building policies and practices. Ensure that all projects are consistent with or exceed the City's Green Building Ordinance and City Council Policies as well as State and/or regional policies which require that projects incorporate various green building principles into their design and construction.
MS-2.2	Encourage maximized use of on-site generation of renewable energy for all new and existing buildings.
MS-2.3	Utilize solar orientation, (i.e., building placement), landscaping, design, and construction techniques for new construction to minimize energy consumption.
MS-2.8	Develop policies which promote energy reduction for energy-intensive industries. For facilities such as data centers, which have high energy demand and indirect greenhouse gas emissions, require evaluation of operational energy efficiency and inclusion of operational design measures as part of development review consistent with benchmarks such as those in USEPA's EnergyStar Program for new data centers.
MS-2.11	Require new development to incorporate green building practices, including those required by the Green Building Ordinance. Specifically target reduced energy use through construction techniques (e.g., design of building envelopes and systems to maximize energy performance), through architectural design (e.g. design to maximize cross ventilation and interior daylight) and through site design techniques (e.g. orienting buildings on sites to maximize the effectiveness of passive solar design).
MS-3.1	Require water-efficient landscaping, which conforms to the State's Model Water Efficient Landscape Ordinance, for all new commercial, institutional, industrial, and developer-installed residential development unless for recreation or other area functions.
MS-3.3	Promote the use of drought tolerant plants and landscaping materials for nonresidential and residential uses.
MS-5.5	Maximize recycling and composting from all residents, businesses, and institutions in the City.

Table 4.6-1: General Plan Policies – Energy Conservation	
Policy	**Description**
MS-6.5	Reduce the amount of waste disposed in landfills through waste prevention, reuse, and recycling of materials at venues, facilities, and special events.
MS-6.8	Maximize reuse, recycling, and composting citywide.
MS-14.3	Consistent with the California Public Utilities Commission's California Long Term Energy Efficiency Strategic Plan, as revised and when technological advances make it feasible, require all new residential and commercial construction to be designed for zero net energy use.
MS-14.4	Implement the City's Green Building Policies (see Green Building Section) so that new construction and rehabilitation of existing buildings fully implements industry best practices, including the use of optimized energy systems, selection of materials and resources, water efficiency, sustainable site selection, and passive solar building design and planting of trees and other landscape materials to reduce energy consumption.
MS-14.5	Consistent with State and Federal policies and best practices, require energy efficiency audits and retrofits prior to or at the same time as consideration of solar electric improvements.
MS-15.9	Train City code enforcement and development review staff in state-of-the-art Heating, Ventilation, and Air Conditioning (HVAC) and insulation industry standards, best practices, and resources to ensure buildings are constructed in compliance with those industry standards and best practices.
IN-2.1	Utilize the City's Infrastructure Management System Program to identify the most efficient use of available resources to maintain infrastructure and minimize the need to replace it.
TR-1.4[110]	Through the entitlement process for new development fund needed transportation improvements for all modes, giving first consideration to improvement of bicycling, walking and transit facilities. Encourage investments that reduce vehicle travel demand.
TR-2.8	Require new development where feasible to provide on-site facilities such as bicycle storage and showers, provide connections to existing and planned facilities, dedicate land to expand existing facilities or provide new facilities such as sidewalks and/or bicycle lanes/paths, or share in the cost of improvements.
TR-3.3	As part of the development review process, require that new development along existing and planned transit facilities consist of land use and development types and intensities that contribute toward transit ridership. In addition, require that new development is designed to accommodate and to provide direct access to transit facilities.

4.6.1.2 *Existing Conditions*

Operation of the Airport currently results in energy consumption from a variety of sources, including aircraft, auxiliary power units (APUs), ground support equipment, on-road mobile sources, stationary sources, and building energy use. Table 4.6-2 summarizes existing energy consumption at the Airport. Calculations of existing energy usage incorporated data for actual airport operations including aircraft, vehicle, equipment, fuel use, and utility usage from July 2017 to June 2018.

4.6.2 <u>Discussion of Energy Impacts</u>

For the purpose of determining the significance of the project's energy impacts, a significant impact would occur if the project would:

1) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during project construction or operation

[110] Policy TR-1.4, as shown, is modified on this list to reflect only those items relevant to the discussion of energy.

2) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Table 4.6-2: Existing Annual Energy Usage at the Airport

Source		Energy Usage	Units
Aircraft and GSE			
Aircraft	Aviation Gasoline	65,950	Gallons
	Jet Fuel	14,231,115	Gallons
GSE	Gasoline	102,911	Gallons
	Diesel	119,545	Gallons
Mobile Sources			
Traffic	Gasoline	10,443,492	Gallons
	Diesel	1,688,387	Gallons
	Natural Gas	8,248	MMBtu
	Electricity	1,410,745	kWh
Airport Shuttles	Natural Gas	19,964	MMBtu
	Electricity	0	kWh
Airside (Off-Road) Equipment	Gasoline	3,431	Gallons
	Diesel	4,585	Gallons
Stationary Sources			
Central Plant Boilers	Natural Gas	19,772	MMBtu
Non-Central Plant Boilers	Natural Gas	1,844	MMBtu
Emergency Generators	Diesel	11,617	Gallons
Utilities			
Electricity		31,744,725	kWh
Water		100,076	kWh

Notes:

kWh = kilowatt hours
MMBtu = one million British Thermal Units

Source: Ramboll US Corporation, 2019.

4.6.2.1 *Energy Consumption*

Impact EN-1: The Project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of energy resources, during Project construction or operation. (Less Than Significant Impact)

Construction Energy Consumption

Construction of the Project would require the use of transportation fuel, including gasoline and diesel use in construction equipment, hauling trucks, vendor vehicles, and construction worker vehicles. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, while vehicle miles traveled (VMT) associated with the transportation of construction materials and construction worker commutes would also result in fuel consumption. Heavy-duty

construction equipment and vendor vehicles associated with construction activities would use diesel fuel. Construction workers would travel to and from the project site throughout the duration of construction. This analysis assumed that construction workers would primarily use gasoline powered passenger vehicles.

Heavy-duty construction equipment of various types would be used during each phase of construction. CalEEMod (Version 2016.3.2) was used to calculate construction equipment usage.[111] Fuel consumption from construction equipment was calculated by converting the total carbon dioxide (CO_2) emissions from each construction phase, which were calculated as part of the GHG analysis for the project (refer to Section 4.8 Greenhouse Gas Emissions), to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. Fuel consumption from worker and vendor trips are calculated by converting the total CO_2 emissions from each construction phase to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline-fueled, and vendor/hauling vehicles are assumed to be diesel-fueled.

While construction would result in electricity demand, electricity for construction would be supplied by generator sets, meaning the associated energy usage is captured in calculations of fuel usage for construction activities. Additionally, construction is not anticipated to require natural gas. As such, electricity and natural gas related to construction of the proposed Project are not discussed further.

Construction of the proposed Project would result in fuel usage as shown in Table 4.6-3. There are no unusual project characteristics or construction processes that would require the use of equipment that would be more energy intensive than is used for comparable activities, or equipment that would not conform to current emissions standards (and related fuel efficiencies). In fact, the construction plan is designed to minimize fuel usage. **(Less Than Significant Impact)**

Table 4.6-3: Total Construction Energy Usage

Construction Description	Fuel Consumption		
	Diesel		Gasoline
	Off-Road Equipment	On-Road Vehicles	Equipment and On-Road Vehicles
	(gallons)		
Landside Projects	453,521	390,275	287,684
Airside Projects	276,505	125,935	122,749
Total	730,026	516,210	410,433

Source: Ramboll US Corporation, 2019.

[111] The California Emissions Estimator Model® (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, the model identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user.

Operational Energy Consumption

Operation of the Project would result in energy usage from a variety of sources, including aircraft, auxiliary power units (APUs), ground support equipment, on-road mobile sources, stationary sources, and building energy use. The Project would result in the consumption of electricity, natural gas, gasoline, diesel, and jet fuel/aircraft fuel

Table 4.6-4 summarizes existing, proposed, and net energy consumption associated with the Project, as calculated using CalEEMod. As shown in the table, operational electricity, natural gas, diesel, and jet fuel requirements are projected to increase compared to existing conditions due to the increase in operational activity at the Airport. Gasoline and aviation gasoline are projected to decrease from the existing conditions due to increased fuel efficiency in the motor vehicle fleet and decreased use activity associated with smaller aircraft that utilize aviation gasoline, respectively.

Effects on Local and Regional Energy Supplies and Capacity[112]

To put the Project's electricity use in context, in 2017, Californians consumed 257,268 gigawatt-hours (GWh) of electricity, of which Santa Clara County consumed 17,190 GWh.[113] The California Energy Commission (CEC) estimates that state-wide energy demand will increase to 322,266 GWh in 2025 with an average annual growth rate of 1.27%.[114] The Project's anticipated increase in electricity usage from 33,256 megawatt-hour (MWh) for existing conditions to 58,021 MWh by 2037 full buildout reflects an increase of 24,765 MWh in electricity usage. As context, this represents approximately 0.01 percent of the total state-wide electricity usage and 0.14% of Santa Clara County electricity usage. Therefore, with regard to the Project's effects on the regional supplies of electricity, the increase in electrical usage due to the Project would be negligible.

The Project's annual natural gas consumption is estimated to increase by 3,967 MMBtu from 49,828 MMBtu at existing conditions to 53,795 MMBtu at full buildout. For context, it is projected that California natural gas demand will decrease in 2030 to 2,230 trillion Btu/yr.[115] The project's natural gas consumption accounts for less than 0.0003% of the projected statewide annual consumption. Therefore, with regard to the Project's effects on the regional supplies of natural gas, the increase in usage of natural gas due to the Project would be negligible.

Although natural gas is the most common electricity source in California, 90% of the state's natural gas is imported from the Rocky Mountain region, the Southwest, and Canadian basins.[116] The United

[112] Per Appendix F of the CEQA Guidelines, this discussion is included for the purpose of describing the Project's use of energy in relation to regional and statewide use and supplies. This context is important because energy resources such as electricity and natural gas originate from an extensive interconnected network that spans multiple states.

[113] California Energy Commission. 2017. Energy Consumption Data Management Service. Electricity Consumption by County. Available at: http://www.ecdms.energy.ca.gov/elecbycounty.aspx. Accessed July 2019.

[114] California Energy Commission. 2016. California Energy Demand Updated Forecast, 2017-2027. Available at: http://docketpublic.energy.ca.gov/PublicDocuments/16-IEPR-05/TN214635_20161205T142341_California_Energy_Demand_Updated_Forecast.pdf Accessed July 2019.

[115] California Energy Commission. 2015. Draft Staff Report: 2015 Natural Gas Outlook. Available at: http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN206501_20151103T100153_Draft_Staff_Report_2015_Natural_Gas_Outlook.pdf. Accessed: April 2017.

[116] U.S. Energy Information Administration. 2016. California State Profile and Energy Estimates: Profile Analysis. Available online at: https://www.eia.gov/state/analysis.cfm?sid=CA. Accessed November 30, 2016.

Table 4.6-4: Operational Energy Usage at the Airport					
Source		**Existing (2018)**	**Project (2037)**	**Net**	**Units**
Aircraft and GSE					
Aircraft	Aviation Gasoline	65,950	24,889	-41,062	Gallons
	Jet Fuel	14,231,115	27,820,361	13,589,246	Gallons
GSE	Gasoline	102,911	148,256	45,345	Gallons
	Diesel	119,545	161,563	42,018	Gallons
Mobile Sources					
Traffic	Gasoline	10,443,492	9,973,819	-469,673	Gallons
	Diesel	1,688,387	1,997,592	309,205	Gallons
	Natural Gas	8,248	14,289	6,039	MMBtu
	Electricity	1,410,745	5,840,740	4,429,995	kWh
Airport Shuttles	Natural Gas	19,964	0	-19,964	MMBtu
	Electricity	0	1,771,795	1,771,795	kWh
Airside (Off-Road) Equipment	Gasoline	3,431	5,217	1,785	Gallons
	Diesel	4,585	6,971	2,386	Gallons
Stationary Sources					
Central Plant Boilers	Natural Gas	19,772	30,059	10,287	MMBtu
Non-Central Plant Boilers	Natural Gas	1,844	2,803	959	MMBtu
Emergency Generators	Diesel	11,617	11,617	0	Gallons
Utilities					
Electricity		31,744,725	48,260,562	16,515,837	kWh
Water		100,076	152,142	52,066	kWh
New Land Use Type					
Hotel	Natural Gas	--	6,647	6,647	MMBtu
	Electricity	--	1,993,500	1,993,500	kWh
	Gasoline	--	118,393	118,393	Gallons
	Diesel	--	23,712	23,712	Gallons
	Natural Gas	--	0.17	0.17	MMBtu
	Mobile Electricity	--	770,353	770,353	kWh
	Water Electricity	--	1,969	1,969	kWh

Notes:
kWh = kilowatt hours
MMBtu = one million British Thermal Units

Source: Ramboll US Corporation, 2019.

States produces 20 trillion standard cubic feet per year (scf/yr) and had 340 trillion scf of proven reserves in 2014.[117] The Project's natural gas consumption is not substantial in comparison to the national natural gas reserves and comprises a tiny portion of annual national natural gas production.

Gasoline and diesel are provided by California's transportation fuels supplier network, as most of the gasoline and diesel fuels are used for transportation to and from the Airport. Overall, the Project will not have a substantial impact on the local or regional energy supplies or require additional capacity to be constructed.

Effects on Peak and Base Period Demands

In 2016, California's peak grid demand was 46,193 MW. On the same day, PG&E reached a maximum demand of 23,752 MW.[118] In comparison, the Project's maximum demand is expected to be 5.5 MW in 2037. This number was derived by conservatively summing the peak demand for all individual land use subtypes, although the peak is unlikely to occur at the same time for all land uses. This also conservatively excludes the benefits of improvements in demand response due to the Title 24 energy standards, which would further reduce peak demand. Title 24 Building Energy Efficiency Standards include measures that encourage load-shifting and demand-response. Title 24 energy use performance standards are based on the time dependent valuation (TDV) of energy, which uses the value of the electricity or natural gas used at every hour of the year to incentivize load shifting off of the peak. The Project will not have a substantial impact on the peak and base period demands for electricity or other forms of energy.

Compliance with Existing Energy Standards

The Project complies with existing energy standards. During implementation, the Project will continue to adhere to state, regional, and local standards designed to ensure that buildings employ strict energy efficiency techniques and deploy transportation improvement initiatives such as improved vehicle efficiency, zero emission technologies and lower carbon fuels.

The Project's anticipated electricity and natural gas use in buildings is shown Table 4.6-4. New building construction is subject to California's Title 24. California's Title 24 reduces energy use in residential and commercial buildings through progressive updates to both the Green Building Standards Code (Title 24, Part 11) and the Energy Efficiency Standards (Title 24, Part 6). Provisions added over the years include consideration and possible incorporation of new energy efficiency technologies and methods for building features such as space conditioning, water heating, lighting, and whole envelope, as well as construction waste diversion goals. Additionally, some standards focus on larger energy saving concepts such as reducing loads at peak periods and seasons, improving the quality of energy-saving installations, and performing energy system inspections. Past updates to the Title 24 standards have proved very effective in reducing building energy use, with the 2013 update to the energy efficiency standards estimated to reduce energy consumption in residential buildings by

[117] California Energy Commission. 2015. Draft Staff Report: 2015 Natural Gas Outlook. Available at: http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-03/TN206501_20151103T100153_Draft_Staff_Report_2015_Natural_Gas_Outlook.pdf.

[118] California ISO. 2017. 2016-2017 Transmission Plan. Available at: http://www.caiso.com/Documents/Board-Approved_2016-2017TransmissionPlan.pdf

25% and energy consumption in commercial buildings by 30%, relative to the 2008 standards.[119] The 2019 standards are expected to further reduce energy consumption.

Conclusion

The Project will not have a substantial impact on the local or regional energy supplies or require additional capacity to be constructed. Furthermore, the project incorporates energy efficiency measures into building design and other project features. Therefore, the Project would not result in wasteful, inefficient, or unnecessary consumption of fuel or energy. **(Less Than Significant Impact)**

4.6.2.2 *Conflicts with Plans*

Impact EN-2:	**The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. (Less Than Significant Impact)**

As described in Section 4.3.2.6 and shown in Table 4.3-4 in Section 4.3, *Air Quality*, the Airport currently implements a multitude of energy efficiency measures that have the combined effect of reducing energy consumption, air pollutant emissions, and GHG emissions. In addition to the measures listed in Table 4.3-4, the Project would implement mitigation measure MM AIR-2.2, which requires that a minimum of 10 percent of the total number of spaces provided in the proposed short- and long-term parking garages (Projects T-4 and T-8, respectively) will be designed and constructed for electric vehicle charging capability (refer to Section 4.3.3.2). Further, the Project would implement mitigation measure MM GHG-1.1, which requires the Airport to participate in the Airports Council International's voluntary Airport Carbon Accreditation program and seek phased certification over build-out of the project to reduce GHG emissions, including emissions from energy use. Through implementation of existing and proposed measures, the Project would not conflict with a state or local plan for renewable energy or energy efficiency, as described in further detail below.

Because state and local plans promoting renewable energy or energy efficiency are often designed to reduce GHG emissions (or vice versa), the analysis of whether a project would conflict with such plans in the context of energy mirrors the analysis of whether a project would conflict with the same plans in the context of GHG emissions. As a result, the discussion below is largely the same as the discussion in Section 4.8.2.2 of this EIR, which analyzes whether the Project would conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions.

State Reduction Strategies

Applicable state renewable energy and/or energy efficiency strategies include: the California Renewables Portfolio Standard as most recently amended by SB 100, Title 24, Assembly Bill 1109, CalGreen Building Code, AB 1493 (Pavley), the Low Carbon Fuel Standard, Advanced Clean Cars Program, SB 375, Senate Bill X7-7, IWMA and AB 341. As shown in Table 5.2-1 in Appendix F, the project would be consistent with applicable state strategies for renewable energy and/or energy efficiency.

[119] CEC. 2012. Energy Commission Approves More Efficient Buildings for California's Future. Available online at: http://www.energy.ca.gov/releases/2012_releases/2012-05-31_energy_commission_approves_more_efficient_buildings_nr.html. Accessed: April 2017.

Plan Bay Area 2040

Plan Bay Area 2040 is the San Francisco Bay Area's Sustainable Communities Strategy (SCS) developed pursuant to SB 375. It outlines the Bay Area's strategies for meeting the region's SB 375 goals. This includes the goals of 1) reducing per-capita CO_2 emissions from cars and light-duty trucks, and 2) providing sufficient housing for the entire region's projected population growth, regardless of income. As shown in Table 5.2-2 in Appendix F, the Project would be consistent with applicable strategies for renewable energy and/or energy efficiency in Plan Bay Area 2040.

Climate Smart San José

Climate Smart San José is the City's plan for reducing air pollution, conserving water, and creating a stronger and healthier community. Climate Smart San José builds on the 15-year Green Vision sustainability plan by charting a path to achieve the GHG emissions reductions contained in the international Paris Agreement on climate change. Climate Smart San José focuses on energy, mobility, and water with nine key strategies. As shown in Table 5.2-3 in Appendix F, the Project would be consistent with applicable strategies for renewable energy and/or energy efficiency in Climate Smart San José.

Envision San José 2040 General Plan

The *Envision San José 2040 General Plan* centers on twelve Major Strategies that outline the city's plan for growth and taking on a growing environmental and economic leadership role. As shown in Table 5.2-4 in Appendix F, the Project would be consistent with applicable strategies for renewable energy and/or energy efficiency in the *Envision San José 2040 General Plan*. **(Less Than Significant Impact)**

4.6.2.3 *Cumulative Impacts*

Impact EN-C:	**The Project would not result in a cumulatively considerable contribution to a significant energy impact. (Less Than Significant Cumulative Impact)**

The geographic area for cumulative energy impacts is the State of California. Past, present, and future development projects contribute to the state's energy impacts. If a project is determined to have a significant energy impact, it is concluded that the impact is cumulatively considerable. As discussed under Impact EN-1 and EN-2, the Project would not result in significant energy impacts or conflict or obstruct a state or local plan for energy efficiency. The Project, therefore, would not have a cumulatively considerable contribution to a significant cumulative energy impact. **(Less Than Significant Cumulative Impact)**

4.7 GEOLOGY AND SOILS

The following discussion is based on information developed from the 1997 Airport EIR, published sources, and reports on file at San José City Hall.

4.7.1 Environmental Setting

4.7.1.1 *Regulatory Framework*

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed into law following the destructive 1971 San Fernando earthquake. The Act ensures public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. Local agencies are responsible for regulating most development projects within designated fault zones. Alquist-Priolo maps are distributed to affected cities, counties, and state agencies for their use in planning and controlling new construction.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) was passed in 1990 following the 1989 Loma Prieta earthquake. The SHMA directs the California Geological Survey (CGS) to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. CGS has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, landslides, and ground shaking, including the central San Francisco Bay Area. The SHMA requires that agencies only approve projects in seismic hazard zones following site-specific geotechnical investigations to determine if the seismic hazard is present and identify measures to reduce earthquake-related hazards.

California Building Standards Code

The California Building Code (CBC) covers grading and other geotechnical issues, building specifications, and non-building structures. The CBC requires that a site-specific geotechnical investigation report be prepared by a licensed professional for proposed developments. The purpose of a site-specific geotechnical investigation is to identify seismic and geologic conditions that require project mitigation, such as surface fault ruptures, ground shaking, liquefaction, differential settlement, lateral spreading, expansive soils, and slope stability.

Public Resources Code Section 5097.5

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. They range from mammoth and dinosaur bones to impressions of ancient animals and plants, trace remains, and microfossils. These are valued for the information they yield about the history of the earth and its past ecological settings. California Public Resources Code Section 5097.5 specifies that unauthorized removal of a paleontological resource is a misdemeanor. Under CEQA

Guidelines, a project would have a significant impact on paleontological resources if it would disturb or destroy a unique paleontological resource, site, or geologic feature.

Local

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects within the City. The policies listed in Table 4.7-1 are specific to geology and soil resources and are applicable to the proposed Project.

Table 4.7-1: General Plan Policies – Geology and Soils

Policy	Description
EC-4.2	Permit development in areas subject to soils and geologic hazards, including unengineered fill and weak soils and landslide-prone areas, only when the severity of hazards have been evaluated and if shown to be required, appropriate mitigation measures are provided. New development proposed within areas of geologic hazards shall not be endangered by, nor contribute to, the hazardous conditions on the site or on adjoining properties. The City of San José Geologist will review and approve geotechnical and geological investigation reports for projects within these areas as part of the project approval process.
EC-4.4	Require all new development to conform to the City of San José's Geologic Hazard Ordinance.
EC-4.5	Ensure that any development activity that requires grading does not impact adjacent properties, local creeks, and storm drainage systems by designing and building the site to drain properly and minimize erosion. An Erosion Control Plan is required for all private development projects that have a soil disturbance of one acre or more, adjacent to a creek/river, and/or are located in hillside areas. Erosion Control Plans are also required for any grading occurring between October 1 and April 30.
ES-4.9	Permit development only in those areas where potential danger to health, safety, and welfare of the persons in that area can be mitigated to an acceptable level.
ER-10.3	Ensure that City, State, and Federal historic preservation laws, regulations, and codes are enforced, including laws related to archaeological and paleontological resources, to ensure the adequate protection of historic and pre-historic resources.

4.7.1.2 *Existing Conditions*

Regional Geology

The Airport is located in the Santa Clara Valley, an alluvial basin, bounded by the Santa Cruz Mountains to the west, the Hamilton/Diablo Range to the east, and the San Francisco Bay to the north. The Santa Clara Valley was formed when sediments derived from the Santa Cruz Mountains and the Hamilton/Diablo Range were exposed by the continued tectonic uplift and regression of the inland sea that had previously inundated this area. Bedrock in this area is made up of the Franciscan Complex, a diverse group of igneous, sedimentary, and metamorphic rocks of Late Jurassic to Cretaceous age (70-140 million years old). Sediments of the Santa Clara Valley are composed of water-bearing Plio-Pleistocene and Upper Quaternary sediments, which are underlain by older non-water bearing rocks. The Upper Quaternary sediments consist of up to 1,000 feet of poorly sorted gravel, sand and clay,

which were deposited in alluvial fan (triangular-shaped deposits of water-transported material) and deltaic (delta) depositional environments.

Site Geology

The Airport is located southeast of San Francisco Bay in the Santa Clara Valley, a relatively flat plain that slopes gently toward the Bay from the base of the foothills of the Hamilton-Diablo Mountain Range and Santa Cruz Mountains. The Santa Clara Valley is a structural trough formed between two and three million years ago. Bedrock in this area is the Franciscan Complex, located at a depth of up to 900 feet below the surface. Both the Valley and the Bay were formed by continued down-faulting and down-warping, accompanied by erosion of the adjacent uplands and deposition of alluvial (stream-deposited) sediments to form the gently sloping alluvial plain. Alluvial sediments are interfingered with estuarine deposits adjacent to San Francisco Bay. The entire near-surface material underlying the Airport and vicinity consists of Holocene (the past 10,000 years) deposited silt and clay.

The Airport occupies a relatively flat site on the northern portion of the Valley floor, adjacent to the Guadalupe River. Elevation varies between 56 feet above mean sea level (msl) at the southern end of the Airport and 28 feet msl at the northern end.

Groundwater and Subsidence

In general, the Airport overlies a three-layer groundwater system: from the surface an upper confined aquifer consisting of sand and gravel lenses interbedded with local clay layers extends to a depth of approximately 150 feet; below the unconfined aquifer, a clay and silt aquitard is approximately 150 feet thick; and below the aquitard a confined aquifer at least 500 to perhaps 600 feet thick is bounded on the bottom by bedrock. Near-surface perched water is common throughout the upper portion of the unconfined aquifer and, therefore, throughout Airport property.

Subsidence can occur when groundwater is withdrawn at a rate faster than it is recharged. In the past, some areas of Santa Clara County subsided up to 14 feet. Between 1938 and 1967, subsidence at the Airport was between seven and eight feet. The high levels of subsidence that occurred earlier this century have been halted, in part by regional conversion from agricultural to urban land uses with consequent reduction in groundwater withdrawal, and in part by a system of reservoirs and groundwater recharge facilities operated by the Santa Clara Valley Water District.

Soils

Airport lands, including the fuel storage parcel, are dominated by very deep, poorly drained soils developed in mottled alluvium. The native surface soils at the Airport consist of medium to high plasticity clays, silty clays, and sandy clays that extend to depths of about 5 to 15 feet. The clays generally are stiff to very stiff in consistency. Test borings from 1987 revealed that the native surface soil layer is covered by a variable thickness of silty and sandy clay fill (2.5 to 3.5 feet thick) or other low to non-plastic soils. Clay soils also are present at depth in the soil profile. Throughout the project area, common soil features include dense sands and gravels at depths of 60 to 80 feet, and thick layers of moderately compressible clays between those depths and the surface; weak soil layers and lenses occur at random locations and depth.

Seismicity

The Airport is located within the San Francisco Bay Area, the most seismically active region in the United States. Faults in the region are capable of generating earthquakes of magnitude 6.7 or higher, and strong to very strong ground shaking would be expected to occur at the Airport during a major earthquake on one of the nearby faults. The U.S. Geological Survey (USGS) estimates that there is a 72 percent chance of at least one magnitude 6.7 earthquake occurring in the Bay Area between 2014 and 2043.[120]

The Airport is not located within a designated Alquist-Priolo Earthquake Fault Zone[121] or in a Santa Clara County Fault Hazard Zone[122] and no active faults have been mapped on-site. Therefore, the risk of fault rupture at the site is low. Faults in the region are, however, capable of generating earthquakes of magnitude 7.0 or higher and strong to very strong ground shaking would be expected to occur at the Airport during a major earthquake on one of the nearby faults. The distance between the site and nearby active faults (faults in which historic displacement has occurred within the last 200 years) near the Airport are shown in Table 4.7-1.

Table 4.7-1: Active Faults Near the Project Site

Fault	Approximate Distance from Site
Calaveras	8 miles east
San Andreas	11 miles west
Hayward	5.5 miles east

Liquefaction

Liquefaction is the result of seismic activity and is characterized as the transformation of loose water-saturated soils from a solid state to a liquid state during ground shaking. During ground shaking, such as during earthquakes, cyclically induced stresses may cause increased pore water pressures within the soil voids, resulting in liquefaction. The Airport is located within a liquefaction zone.[123]

Lateral Spreading

Lateral spreading is a failure within a nearly horizontal soil zone (possibly due to liquefaction) that causes the overlying soil mass to move toward a free face (such as an open body of water, channel, or excavation) or down a gentle slope. Since the Airport is relatively fat, there is very low potential for lateral spreading to occur.

[120] United States Geological Survey. "Earthquake Outlook for the San Francisco Bay Region 2014 – 2043." August 2016. Available at: https://pubs.usgs.gov/fs/2016/3020/fs20163020.pdf. Accessed July 31, 2019
[121] California Geological Survey. "Earthquake Zones of Required Investigation." Available at: https://maps.conservation.ca.gov/cgs/EQZApp/ Accessed July 31, 2019.
[122] Santa Clara County Geologic Hazard Zones Map, Map 19. Accessed July 31, 2019.
[123] California Geological Survey. "Earthquake Zones of Required Investigation." Available at: https://maps.conservation.ca.gov/cgs/EQZApp/ Accessed July 31, 2019.

Paleontological Resources

Paleontological resources or fossils are the remains of prehistoric plant and animal life. Paleontological resources do not include human remains or artifacts. Fossil remains such as bones, teeth, shells, and wood are found in geologic formations. Paleontological resources are limited, non-renewable, sensitive scientific and educational resources. The potential for fossil remains at a location can be predicted based on whether or not previous fossil finds have been made in the vicinity, as well as based on the age of the geologic formations.

According to the General Plan EIR, future development and redevelopment allowed under the General Plan has the potential to impact undiscovered paleontological resources. However, as noted previously, the project site consists of Holocene (the past 10,000 years) deposited silt and clay, and bedrock that could contain fossils is buried deep. Proposed construction is not likely to encounter fossils, unless fossils were present in younger alluvium through transportation from areas where bedrock was exposed.

4.7.2 Discussion of Geological Impacts

For the purpose of determining the significance of the project's impacts on geological resources, a significant impact would occur if the project would:

1) 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
    - Strong seismic ground shaking
    - Seismic-related ground failure, including liquefaction
    - Landslides
2) Result in substantial soil erosion or the loss of topsoil
3) 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
4) Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2016), creating substantial direct or indirect risks to life or property
5) 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 waste water
6) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

4.7.2.1 *Project Impacts Related to Soils and Seismic Conditions*

Impact GEO-1:	**The Project would not 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; strong seismic ground shaking; seismic-related ground failure, including liquefaction; or landslides. (Less Than Significant Impact)**

The Airport is located within the seismically active San Francisco Bay Area, which has a 72 percent probability of experiencing at least one magnitude 6.7 earthquake during the next 30 years. In the event of a large earthquake, the project site would experience intense ground shaking. The proposed Project includes the expansion of the fuel storage facility, which involves the construction of five new above-ground tanks.

Additionally, the Project would construct new parking structures and a multi-story hotel, which would be subject to seismic shaking. Each structure would be designed in accordance with standard engineering and seismic-safety design techniques that would reduce safety risks in the event of an earthquake.

The Airport is not located within an earthquake fault zone on an Alquist-Priolo Earthquake Fault Zoning Map and, therefore, the potential for fault rupture at the site is low. The Airport and area are flat and are not located in a landslide hazard zone. Therefore, there is no potential for landslides to occur on-site. Additionally, no known faults occur beneath the project site.

By conforming to standard engineering and seismic safety design techniques outlined in the City of San José's Building Division and California Building Code, all structures that collectively compose the proposed Project would not expose people or structures to substantial adverse effects; nor would the project exacerbate existing geological hazards on the Airport such that it would impact (or worsen) off-site geological and soil conditions. **(Less Than Significant Impact)**

Impact GEO-2:	**The Project would not result in substantial erosion or the loss of topsoil. (Less Than Significant Impact)**

Grading, trenching, and construction of the proposed Project would result in ground disturbance at the site. Ground disturbance would expose soils and increase the potential for wind or water related erosion and sedimentation at the site until construction is complete. In order to avoid significant soil erosion impacts, the following conditions would be included as part of the Project:

Standard Conditions

To avoid or minimize potential damage from seismic shaking and seismic-related hazards, including the presence of soils that are expansive and/or subject to liquefaction, the improvements to be constructed under the Airport Master Plan will be subject to the following standard conditions:

- Facilities shall be built using standard engineering and seismic safety design techniques.
- As required by the California Building Code, a design-level geotechnical investigation shall be completed, as warranted, for Airport facilities, which shall include design and construction recommendations to avoid and reduce seismic and seismic-related hazards (including liquefaction and lateral spreading). The Airport shall implement the recommendations identified in the design-level geotechnical investigation.

Through the implementation of these standard conditions, the proposed Project would avoid substantial soil erosion and would not cause a significant loss of topsoil. **(Less Than Significant Impact)**

Impact GEO-3:	**Although the Project would be located on soil that could become unstable during an earthquake, the implementation of standard permit conditions and compliance with current seismic safety codes will minimize any significant effects due to this condition. (Less Than Significant Impact)**

As noted previously, the Airport is within the seismically active San Francisco Bay Area and severe ground shaking is probable during the anticipated life of the Project. Users of the Airport's facilities would be exposed to hazards associated with severe ground shaking during a major earthquake on one of the region's active faults. This hazard is not unique to the project because it applies to all locations throughout the greater Bay Area. The proposed Project will not increase the existing exposure to hazards associated with earthquakes; the hazards in the area will be the same with or without the Project. With the implementation of the Standard Permit Conditions outlined above in Impact GEO-2, the Project's impacts will be less than significant. **(Less Than Significant Impact)**

Impact GEO-4:	**The Project would be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2016), however, it would not create substantial direct or indirect risks to life or property. (Less Than Significant Impact)**

The topography of the Airport and the surrounding area is flat and, therefore, the potential for the Project to induce landslides, cause erosion, or result in topsoil loss is considered very low. The proposed Project, with implementation of the Standard Conditions outlined previously, would not result in significant seismic or soil impacts such that it would result in risk to life or property of surrounding development. **(Less Than Significant Impact)**

4.7.2.2 *Impacts Associated with Septic Tanks or Wastewater Disposal Systems*

Impact GEO-5:	**The Project would not 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. (No Impact)**

The existing and proposed facilities at the Airport do not (and will not) include the use of septic tanks or alternative wastewater disposal systems. **(No Impact)**

4.7.2.3 *Impacts to Paleontological Resources*

Impact GEO-6:	**With the implementation of standard conditions, the Project would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature. (Less Than Significant Impact)**

Paleontological resources are the fossilized remains and/or traces of prehistoric plant and animal life exclusive of human remains or artifacts. Fossil remains, such as bones, teeth, shells, and wood, are found in geologic deposits (rock formations). Because the proposed Project would not excavate into bedrock, and the site is underlain by young alluvial deposits, the likelihood of discovery of significant fossils is very low.

The Project shall comply with all applicable City regulatory programs and policies pertaining to unknown paleontological resources including the following Standard Condition to ensure that the proper precautions are taken during an inadvertent paleontological discovery.

Standard Condition

Should a unique paleontological resource or site or unique geological feature be identified at the project site during any phase of construction, all ground disturbing activities within 25 feet shall cease and the Director of Planning, Building, and Code Enforcement shall be notified immediately. A qualified paleontologist shall evaluate the find and prescribe mitigation measures to reduce impacts to a less than significant level. Work may proceed on other parts of the project site while mitigation for paleontological resources or geologic features is implemented. Upon completion of the paleontological assessment, a report shall be submitted to the City's Director of Planning, Building, and Code Enforcement and, if paleontological materials are recovered, a paleontological repository, such as the University of California Museum of Paleontology. **(Less Than Significant Impact)**

4.7.2.4 *Cumulative Impacts*

Impact GEO-C:	**The Project would not result in a cumulatively considerable contribution to a significant geology and soils impact. (Less Than Significant Cumulative Impact)**

The existing geology and soils conditions at and adjacent to the Airport would not be exacerbated by the Project such that off-site geology and soils conditions would be impacted or worsened and there is no potential for the project's localized, site-specific conditions to combine with the geologic impacts of other cumulative development. For instance, multiple projects constructing in a landslide could create cumulative conditions that destabilize and exacerbate the risk of landslide, but that is not the case here. The geologic conditions on the site will be addressed through standard practices for development across the Valley floor, and have no implications for geologic issues faced on other development sites. For this reason, the Project would not contribute to a cumulatively significant geology and soils impact. **(Less Than Significant Cumulative Impact)**

4.8 GREENHOUSE GAS EMISSIONS

The following discussion is based on a Greenhouse Gas Emissions Assessment prepared by Ramboll US Corporation in October 2019. The report is included as Appendix G to this EIR.

4.8.1 Introduction

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the United States, the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources are the largest contributors of GHG emissions. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

4.8.2 Regulatory Framework

The following discussion highlights and summarizes key policies and regulations regarding the reduction of GHG emissions that have been adopted at the international, federal, state, regional, and local levels. Please see Section 2.4 of Appendix G for an expanded discussion of this topic.

4.8.2.1 *International*

Kyoto Protocol

The Kyoto Protocol, adopted on December 11, 1997, is an international agreement that is linked to the United Nations Framework Convention on Climate Change (UNFCCC). It sets targets and timetables for 36 industrialized countries and the European community to reduce GHG emissions. The targets amount to an average 5% reduction against 1990 levels over the 5-year period from 2008 to 2012.

Emissions from international aviation are specifically excluded from the Kyoto Protocol, which instead instructs countries to mitigate these emissions through work with the International Civil Aviation Organization (ICAO), discussed below.

Paris Agreement

The Paris Agreement, developed in December 2015, is an international agreement among parties in the UNFCCC. The central aim of the Paris Agreement is to maintain the global temperature rise in the

21st century below 2 degrees Celsius above pre-industrial levels. Furthermore, the Paris Agreement provides for increased transparency, requires all parties to maintain and communicate "nationally determined contributions" that they intend to achieve, and aims to erect financial and technology frameworks for reaching the climate goals it puts forth. The agreement addresses a range of areas necessary to combat climate change, including a long-term temperature goal, global peaking of GHG emissions, mitigation, and a "global stocktake" every five years.

International Civil Aviation Organization

ICAO was created in 1944 to promote the safe and orderly development of international civil aviation throughout the world. It sets standards and regulations necessary for aviation safety, security, efficiency and regularity, as well as for aviation environmental protection. ICAO serves as the forum for cooperation in all fields of civil aviation among its 193 Member States.

A global agreement reached by the 37th Session of the ICAO Assembly in October 2010 established ICAO's objective for aviation's role in the management of climate change. It provides a roadmap for action through 2050 for the 191 Member States and invites them to voluntarily submit their action plans to reduce CO_2 emissions to ICAO by June 2012. The action plans are intended to allow Member States to showcase the specific voluntary measures they intend to take in order to improve efficiency and thereby contribute to the global environmental aspirational goals established by the Assembly.

In October 2016, a global agreement reached by the 39th Session of the ICAO Assembly established the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). This agreement set an international aviation GHG emissions reduction target of 50% by 2050, relative to 2005 levels, with an overall goal of carbon-neutral growth from 2020 onwards. Under CORSIA, and subject to phased implementation, airlines will be required to buy carbon offsets to compensate for their growth in CO_2 emissions associated with international air travel.

4.8.2.2 *Federal*

Federal Aviation Administration

According to the 2014 United States Climate Action Report, the FAA is pursuing a comprehensive approach to reduce GHG emissions from commercial aviation through aircraft and engine technology development, operational improvements, development and deployment of sustainable alternative jet fuels, and additional policies and measures.[124] FAA's Next Generation Air Transportation System Plan, or NextGen, focuses its efforts on increasing efficient aircraft operations and reducing GHG emissions through airspace, operational, and infrastructure improvements. FAA funds diverse programs to improve aviation energy and emissions performance, and coordinates with other agencies as appropriate, including the National Aeronautics and Space Administration. The following are some examples of FAA programs:

- The Continuous Lower Energy, Emissions, and Noise (CLEEN) program is a collaborative partnership between the FAA and aviation manufacturers to develop technologies that will

[124] United States of America. 2014 United States Climate Action Report. Available at: https://www.globalchange.gov/browse/reports/us-climate-action-report-2014. Accessed: April 2019.

reduce emissions and fuel burn, as well as expedite the integration of these technologies into current aircraft.

- The Aviation Climate Change Research Initiative (ACCRI) is an FAA program that provides guidance to develop mitigation solutions based on state-of-the-art science results. ACCRI results are key to quantifying cost–benefit analyses of various policy options. ACCRI has reduced uncertainties, leading to overall improvement in understanding of the climate impacts of aviation. While ACCRI does not provide mitigation solutions on its own, recently completed ACCRI Phase II results can be used to help identify effective mitigation options.
- The Voluntary Airport Low Emissions Program (VALE) is a grant program that encourages airport sponsors to use Airport Improvement Program funds and Passenger Facility Charges to finance low-emission vehicles, refueling and recharging stations, gate electrification, and other airport air quality improvements. Under FAA's most recent reauthorization, VALE's work is supplemented by new programs that reduce airport emissions. The FAA is creating a program where, following an assessment of airport energy requirements, the FAA may make capital grants for airports to increase energy efficiency. The FAA has also established a pilot program under which certain airports may acquire and operate zero-emission vehicles.

In addition, the FAA is a founding member of the Commercial Aviation Alternative Fuels Initiative (CAAFI). CAAFI is a public–private partnership established in 2006 with the objective of advancing alternative jet fuels with equivalent safety/performance (drop-in) and comparable cost, environmental improvement, and security of energy supply for aviation. Work through CAAFI has also expanded internationally. Fuel production capability is beginning to emerge, including a recently announced airline and fuel producer agreement.

Aviation Greenhouse Gas Emissions Reduction Plan

The United States is committed to addressing the climate change impacts of commercial aviation and is pursuing a multi-pronged approach to achieve GHG emissions reductions.[125] The Aviation Greenhouse Gas Emissions Reduction Plan,[126,127] which was submitted to ICAO as the U.S. Action Plan, identifies actions and progress toward GHG emission reductions in each of the following areas:

- Aircraft and Engine Technology Improvement: There are multiple technology initiatives dedicated to developing technology with significantly improved fuel burn and lower GHG emissions. These include the FAA CLEEN program described above, the National Aeronautics and Space Administration (NASA) Environmentally Responsible Aviation (ERA) and Advanced Air Transport Technology (AATT) projects, and U.S. Air Force research and testing on vehicle efficiency improvements (e.g., through the Adaptive Engine Technology Development program) that can often transition into development of commercial products that are utilized by the civil fleet.

[125] United States of America. 2012. U.S. Aviation Greenhouse Gas Emissions Reduction Plan (2012) Submitted to the International Civil Aviation Organization, June 2012. Available at: https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/media/Aviation_Greenhouse_Gas_Emissions_Reduction_Plan.pdf. Accessed: April 2019.

[126] Ibid.

[127] United States of America. 2015. U.S. Aviation Greenhouse Gas Emissions Reduction Plan (2015) Submitted to the International Civil Aviation Organization, June 2015. Available at: https://crp.trb.org/acrp0267/united-states-aviation-greenhouse-gas-emissions-reduction-plan/. Accessed: April 2019.

- Operational Improvements: Implementation of the FAA's NextGen plan will allow for more efficient aircraft operations and reduced GHG emissions through operational improvements. Many foundational and infrastructure elements are expected to be in place in the near-term, providing critical NextGen capabilities or infrastructure upon which future NextGen capabilities will be built.
- Alternative Fuels Development and Deployment: The United States is actively supporting and facilitating the development and deployment of sustainable alternative jet fuels with lower life-cycle GHG emissions than conventional petroleum fuel. Thus far, the standard setting organization ASTM International has approved three alternative jet fuels for use in aviation. Research is ongoing to pursue additional approvals and also examine the viability of regional supply chains and chart a path for overcoming barriers to production.
- Policies, Standards, and Measures: The United States is pursuing a variety of policies, standards, and measures that will supplement efforts on technology, operations and fuels in order to further reduce aviation emissions. The United States is focused on two items, in particular: (1) The development of a meaningful CO_2 standard in ICAO for implementation in the United States, and (2) working with ICAO on the development of a proposal for a Global Market-Based Measure (GMBM) to serve as a gap filler to address international aviation GHG emissions.
- Scientific Understanding and Modeling/Analysis: The FAA is continually improving its modeling and analysis tools in order to better understand and assess the environmental impacts of aviation.

4.8.2.3 *State*

Global Warming Solutions Act

Under the California Global Warming Solutions Act, also known as Assembly Bill (AB) 32, CARB established a statewide GHG emissions cap for 2020, and adopted mandatory reporting rules for significant sources of GHG and a comprehensive plan, known as the Climate Change Scoping Plan, identifying how emission reductions would be achieved from significant GHG sources.

In 2016, Senate Bill (SB) 32 was signed into law, amending the California Global Warming Solution Act. SB 32, and accompanying Executive Order B-30-15, require CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. CARB updated its Climate Change Scoping Plan in December of 2017 to express the 2030 statewide target in terms of million metric tons of carbon dioxide equivalent ($MMTCO_2e$). Based on the emissions reductions directed by SB 32, the annual 2030 statewide target emissions level for California is 260 $MMTCO_2e$.

The Scoping Plan does not contain any language, targets, or measures related to aircraft emissions. However, the California Greenhouse Gas Inventory, upon which CARB relies for establishing baseline GHG emissions and tracking progress toward emissions targets, includes emissions from intrastate aircraft operations. The baseline emissions levels and 2030 emissions target addressed in the Scoping Plan, therefore, account for intrastate flights utilizing the Airport, but not interstate or international flights.[128]

[128] CARB. California Greenhouse Gas Inventory for 2000-2017 - by Category as Defined in the 2008 Scoping Plan, Available at: https://ww3.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-17.pdf. Accessed August 25, 2019.

Cap-and-Trade Program

AB 32 allowed, but did not require, CARB to include among the mechanisms intended to reduce GHG emissions a "system of market-based declining annual aggregate emission limits." The legislation required CARB to develop a Scoping Plan to describe the various mechanisms that would be used. In turn, the Scoping Plan, approved by CARB on December 11, 2008, directed CARB staff to develop, among other programs, a cap-and-trade mechanism that would apply a declining aggregate cap on GHG emissions and provide a flexible compliance system using tradable instruments.

On October 20, 2011, CARB adopted the final cap-and-trade regulation. The program started on January 1, 2012, and will proceed in "compliance phases," the first of which began on January 1, 2013. The program imposes a "cap" on the total GHG emissions from covered entities in the state, and the quantity of emissions allowed under the cap decreases each year, ultimately reaching the goal of returning state-wide GHG emissions to 1990 levels by 2020.

To encourage emission sources to emit less as the cap decreases, "allowances," or permission to emit GHGs, are made available in decreasing quantities. Allowances are both freely allocated and auctioned off. The amount of freely given allowances decreases over time, and the severity of the decrease varies by industrial sector, with those thought to be less vulnerable to out-of-state competition receiving fewer allowances more quickly. Similarly, the amount of allowances available for purchase at auction decreases. The intent is to make reducing GHG emissions more financially attractive as the number of available allowances decreases, making each allowance more costly.

Senate Bill 375

SB 375, known as the Sustainable Communities Strategy and Climate Protection Act, was signed into law in September 2008. SB 375 builds upon AB 32 by requiring CARB to develop regional GHG reduction targets for automobile and light truck sectors for 2020 and 2035, as compared to 2005 emissions levels. The per-capita GHG emissions reduction targets for passenger vehicles in the San Francisco Bay Area, which were updated by CARB in 2018, include a 10 percent reduction by 2020 and a 19 percent reduction by 2035.[129]

Consistent with the requirements of SB 375, the Metropolitan Transportation Commission partnered with the Association of Bay Area Governments, BAAQMD, and Bay Conservation and Development Commission to prepare the region's Sustainable Communities Strategy (SCS) as part of the Regional Transportation Plan process. The SCS is referred to as Plan Bay Area. Plan Bay Area establishes a course for reducing per-capita GHG emissions through the promotion of compact, high-density, mixed-use neighborhoods near transit.

Executive Order B-55-18

In September 2018, Governor Brown signed EO B-55-18, which established a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter."

[129] CARB, SB 375 Regional Plan Climate Targets, Available at: https://ww2.arb.ca.gov/our-work/programs/sustainable-communities-program/regional-plan-targets, Accessed October 13, 2019.

Clean Cars

In January 2012, CARB approved the Advanced Clean Cars Program, which established an emissions control program for cars and light-duty trucks (such as SUVs, pickup trucks, and minivans) of model years 2017-2025. When the program is fully implemented, new vehicles will emit 75% less smog-forming pollutants than the average new car sold today, and GHG emissions will be reduced by nearly 35%. The program also requires car manufacturers to offer for sale an increasing number of zero-emission vehicles (ZEVs) each year, including battery electric, fuel cell, and plug-in hybrid electric vehicles.

In December 2012, CARB adopted regulations allowing car manufacturers to comply with California's GHG emissions requirements for model years 2017-2025 through compliance with USEPA GHG requirements for those same model years.

4.8.2.4 *Regional*

Bay Area 2017 Clean Air Plan

Regional air quality management districts, such as BAAQMD, must prepare air quality plans specifying how state and federal air quality standards would be met. BAAQMD's most recently adopted plan is the *Bay Area 2017 Clean Air Plan* (2017 CAP). The 2017 CAP focuses on two related BAAQMD goals: protecting public health and the climate. To protect the climate, the 2017 CAP includes control measures designed to reduce emissions of methane and other super-GHGs (e.g., methane) that are potent climate pollutants in the near-term, and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines are intended to serve as a guide for those who prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. The City of San José and other jurisdictions in the San Francisco Bay Area Air Basin utilize BAAQMD's thresholds and methodology for assessing GHG impacts under CEQA. The guidelines include information on legal requirements, BAAQMD rules, methods of analyzing impacts, and recommended mitigation measures.

Note that while BAAQMD established CEQA GHG significance thresholds to assess project operational impacts, these thresholds are not applicable to airports. The stationary-source projects threshold adopted by BAAQMD is 10,000 MT CO_2e/year. This threshold is not applicable to the proposed Project since the great majority of GHG emissions associated with the airport operations are not associated with stationary sources but are rather associated with aircraft and mobile sources. Similarly, BAAQMD thresholds for land use development projects (1,100 MT CO_2e/year and 4.6 MT CO_2e/service population/year) are not facially applicable to airports, particularly given the complete lack of consideration of aviation in the development of these draft thresholds.

4.8.2.5 *Local*

Envision San José 2040 General Plan

The General Plan includes strategies, policies, and action items that are also incorporated in the City's GHG Reduction Strategy to help reduce GHG emissions. Multiple policies and actions in the General Plan have GHG implications, including land use, housing, transportation, water usage, solid waste generation and recycling, and reuse of historic buildings. The policies listed in Table 4.8-1 are specific to GHG emissions and are applicable to the proposed Project.

Table 4.8-1: General Plan Policies – Greenhouse Gases

Policy	Description
CD-3.2	Prioritize pedestrian and bicycle connections to transit, community facilities (including schools), commercial areas, and other areas serving daily needs. Ensure that the design of new facilities can accommodate significant anticipated future increases in bicycle and pedestrian activity
CD-5.1	Design areas to promote pedestrian and bicycle movements, to facilitate interaction between community members, and to strengthen the sense of community.
MS-1.1	Demonstrate leadership in the development and implementation of green building policies and practices. Ensure that all projects are consistent with or exceed the City's Green Building Ordinance and City Council Policies as well as State and/or regional policies which require that projects incorporate various green building principles into their design and construction.
MS-2.3	Utilize solar orientation (i.e., building placement), landscaping, design, and construction techniques for new construction to minimize energy consumption.
MS-2.6	Promote roofing design and surface treatments that reduce the heat island effect of new and existing development and support reduced energy use, reduced air pollution, and a healthy urban forest. Connect businesses and residents with cool roof rebate programs through City outreach efforts.
MS-2.11	Require new development to incorporate green building policies, including those required by the Green Building Ordinance. Specifically, target reduced energy use through construction techniques (e.g., design of building envelopes and systems to maximize energy performance), through architectural design (e.g., design to maximize cross ventilation and interior daylight) and through site design techniques (e.g., orienting buildings on sites to maximize effectiveness of passive solar design.).
MS-5.5	Maximize recycling and composting from all residents, businesses, and institutions in the City.
MS-5.6	Enhance the construction and demolition debris recycling program to increase diversion from the building sector.
MS-14.4	Implement the City's Green Building Policies so that new construction and rehabilitation of existing buildings fully implements industry best practices, including the use of optimized energy systems, selection of materials and resources, water efficiency, sustainable site selection, passive solar building design, and planting of trees and other landscape materials to reduce energy consumption.
MS-21.1	Manage the Community Forest to achieve San José's environmental goals for water and energy conservation, wildlife habitat preservation, stormwater retention, heat reduction in urban areas, energy conservation, and the removal of carbon dioxide from the atmosphere.
TR-1.16	Develop a strategy to construct a network of public and private alternative fuel vehicle charging/fueling stations city wide. Revise parking standards to require the installation of electric charging infrastructure at new large employment sites and large, multiple family residential developments.

Greenhouse Gas Reduction Strategy

The City, in conjunction with preparation of the *Envision San José 2040 General Plan*, prepared a GHG Reduction Strategy to ensure that implementation of the General Plan through 2020 aligns with implementation requirements of AB 32 (2020 emission target).

The City's GHG Reduction Strategy, adopted in 2011, identifies GHG emissions reduction measures to be implemented by development projects in three categories: built environment and energy, land use and transportation, and recycling and waste reduction. Some measures are mandatory for all proposed development projects and others are voluntary. Voluntary measures could be incorporated as mitigation measures for proposed projects, at the City's discretion. The City's current GHG Reduction Strategy addresses 2020 emissions per AB 32 and does not address meeting the requirements of SB 32 (2030 emission target). The City is currently preparing an update to its GHG Reduction Strategy to be consistent with the requirements of SB 32 for planned General Plan growth through 2030.

4.8.3 Existing Conditions

The Airport currently generates GHG emissions from a variety of sources, including aircraft, auxiliary power units, ground support equipment, built environment attributes (e.g., parking garages, terminal buildings, and other airport facilities), and on-road mobile sources. Existing GHG emissions were calculated based on data for actual airport operations, including aircraft, vehicle, equipment, fuel use, and utility usage from July 2017 to June 2018. As shown in Table 4.8-2, existing GHG emissions total approximately 257,805 metric tons (MT) CO_2e/year.

Table 4.8-2: Existing GHG Emissions

Source		Existing CO_2e (MT/year)
Aircraft and GSE		
Aircraft		139,083
GSE	Gasoline	912
	Diesel	1,232
Mobile Sources		
Traffic		108,071
Airport Shuttles		1,051
Airside (Off-Road) Equipment	Gasoline	30
	Diesel	47
Stationary Sources		
Boilers		1,050
Miscellaneous Natural Gas Combustion		98
Emergency Generators		121
Utilities		
Electricity		5,475
Water		17
Waste		168
Total Annual Emissions		**257,805**

Aircraft emissions include all phases (e.g., approach, landing, taxiing, takeoff, climbout) below 3,000 feet.

4.8.4 Discussion of GHG Impacts

For the purpose of determining the significance of the project's GHG impacts, a significant impact would occur if the project would:

1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment
2) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

There are no widely-established or readily accepted thresholds of significance for GHG emissions for airport-related projects. Additionally, a quantitative threshold of significance for GHG emissions was not identified in the 2009 or 2018 amendments to the State CEQA Guidelines. Rather, these amendments allow lead agencies the discretion to establish their own significance thresholds, provided such thresholds are supported by substantial evidence.

Specifically, CEQA Guidelines section 15064.4[130] discusses the significance evaluation for GHG emissions. Section 15064.4(a) recognizes that the "determination of the significance calls for a careful judgment" by the lead agency that is coupled with lead agency discretion to determine whether to (1) quantify greenhouse gas emissions resulting from a project,[131] and/or (2) rely on a qualitative analysis or performance based thresholds. Section 15064.4(b) states that a lead agency should focus analysis on the incremental contribution of the project's emissions to climate change, and that a project's incremental contribution may be cumulatively considerable even if it appears small compared to statewide, national, or global emissions. Section 15064.4(b) further states that a lead agency should consider the following, non-exclusive list of factors when assessing the significance of GHG emissions:

- The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
- The extent to which project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

In accordance with CEQA Guidelines section 15064.4(b) and the Appendix G criteria, this EIR discloses the extent to which the Project increases emission levels relative to existing emission levels associated with operations at the Airport. This EIR also assesses the significance of the Project's GHG

[130] CNRA. 2018. Final Adopted Text of the 2018 Amendments and Additions to the State CEQA Guidelines. Available at: http://resources.ca.gov/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf. Accessed: April 2019.

[131] Ibid. Section 15064.4(c) states that a lead agency may use a model or methodology of its discretion to estimate greenhouse gas emissions resulting from a project. The selection of the model or methodology must be supported with substantial evidence.

emissions based on consistency with state, regional, and local GHG reduction plans; SB 32 and its implementing Scoping Plan. Among the relevant state, local, and regional plans, only the Scoping Plan for implementing SB 32 addresses aircraft emissions, albeit indirectly. The Scoping Plan does not contain any language, targets, or measures related to aircraft emissions. However, the California Greenhouse Gas Inventory, upon which CARB relies for establishing baseline GHG emissions and tracking progress toward emissions targets, includes emissions from intrastate aircraft operations. The baseline emissions levels and 2030 emissions target addressed in SB 32 and the Scoping Plan, therefore, account for intrastate flights utilizing the Airport, but not interstate or international flights.[132] For these reasons, the discussion of consistency with plans in this EIR focuses mainly on Airport activities other than aircraft operations.

4.8.4.1 *Generation of GHG Emissions*

Impact GHG-1:	**The Project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. (Significant Unavoidable Impact)**

Construction GHG Emissions

Project construction would generate GHG emissions through the use of construction equipment, truck haul trips, and construction workers and vendors traveling to and from the project site. The assessment of construction GHG emissions considers each of these sources and recognizes that construction emissions can vary substantially from day to day, depending on the level of activity and the specific type of operation.

Methodology

To quantify emissions from landside construction improvements (i.e., parking garage, terminal expansion, hotel), CalEEMod was used.[133] To calculate emissions from the construction of airside (runway and taxiway) improvements, the ACEIT was used. See Appendix G for a description of these models, which are tools developed for this type of analysis.

Emissions Estimate

The Project would result in approximately 16,644 MT CO_2e from construction activities, of which 11,360 MT CO_2e would be associated with landside projects and 5,284 MT CO_2e would be associated with airside projects. These emissions represent the entire construction period of the Project.

Operational GHG Emissions

Operation of the Project would result in GHG emissions from a variety of sources, including aircraft, auxiliary power units, ground support equipment, new built environment attributes (e.g., hotel, parking garages, expansion of terminal buildings and other airport facilities), and on-road mobile sources.

[132] CARB. California Greenhouse Gas Inventory for 2000-2017 - by Category as Defined in the 2008 Scoping Plan. Available at: https://ww3.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-17.pdf. Accessed August 25, 2019.

[133] CAPCOA. California Emissions Estimator Model® version 2016.3.2. Available at: http://www.caleemod.com/. Accessed: April 2019.

It is important to acknowledge that the Project would not necessarily create entirely "new" operational GHG emissions, since the Project does not itself create the additional demand for passenger air travel. Rather, the additional demand will result from the projected growth of jobs and housing in the region per the approved general plans of the cities and counties, and the related increase in air passenger activity, cargo activity, and General Aviation that goes with regional growth.

For purposes of this analysis, emission sources that are not under the jurisdictional authority of the City of San José are still included. The primary example of such emissions is those from aircraft operations because, under federal deregulation, the City does not control the numbers of flights at the Airport. Additionally, the Airport has no authority to regulate the emissions from the operation of aircraft engines. Section 233 of the federal Clean Air Act exclusively vests the authority to promulgate emission standards for aircraft and aircraft engines with the USEPA; states and other municipalities are preempted from adopting or enforcing any standard respecting aircraft engine emissions unless such standard is identical to the USEPA's standards.

Methodology

The primary tool used to assist in quantifying operational GHG emissions for the Airport was the AEDT. As described in Appendix G, AEDT is a combined emissions and dispersion model for assessing air quality at civilian airports and military air bases.[134,135] The model was developed by the FAA in cooperation with the United States Air Force. The model is used to produce an inventory of emissions generated by sources on and around the airport, and to calculate pollutant concentrations in these environments.

A description of the Project's operational GHG emissions sources and the methodology used to estimate their respective emissions are included below.

Aircraft: Aircraft operational emissions are based on project-specific projections of aircraft landings and takeoffs,[136] and modeled using AEDT. The aircraft data included 89 potential aircraft types. Given the length of this planning timeframe (i.e., through 2037), the projections assume that there will be some fleet turnover and introduction of newer and next generation aircraft, which are anticipated to be more fuel efficient and produce less emissions. Note that this analysis does not explicitly account for ICAO and USEPA programs to reduce aircraft emissions. While it is expected that these will help reduce emissions, these programs are still being developed and details of implementation are not known yet. Therefore, the analysis conservatively does not quantify the benefits of these programs at this time.

Emissions were calculated based on AEDT default emission factors by aircraft type and AEDT default calculations for aircraft performance and times-in-mode (e.g., ground roll, takeoff, climbout, and approach). Stage length (a measure of how far the aircraft flies) is a required input for departing aircraft operations as it influences the weight of the aircraft at takeoff and affects takeoff and climbout

[134] FAA. Aviation Environmental Design Tool (AEDT). Available at: https://aedt.faa.gov/. Accessed: April 2019.

[135] AEDT replaced the FAA's Emissions and Dispersion Modeling System (EDMS) as of May 2015.

[136] The aircraft fleet mix is based on mapping for the Airport using forecasts from Mineta-San Jose International Airport Master Plan Demand Forecast Update Technical Report, HNTB Corporation, June 2, 2017 prepared for the FAA's 2017 RIM study.

performance (and, consequently, emissions produced from these operations). Assumptions on stage length are based on actual operations in 2018. Average taxi-in and -out times were obtained from the FAA's Aviation System Performance Metric database for actual operations at the Airport in 2018.

It should be noted that AEDT only calculates aircraft emissions that occur between ground level and the atmospheric mixing height of 3,000 feet. Although GHG emissions from aircraft occur above 3,000 feet, there is no reliable way to estimate these emissions since AEDT represents the best available method for aircraft emissions calculations. Data on jet fuel and aviation fuel use from the project were also generated by AEDT and only include activities below the mixing height, so any manual GHG emissions calculation based on fuel usage assumptions would also only capture emissions below the mixing height. Further, given that the origins and destinations of flights utilizing the Airport change over time, there is no reliable way to estimate overall flight lengths (and resulting fuel consumption) associated with the Airport for the purposes of estimating GHG emissions. Even if flight lengths were to be estimated, there is no standard for determining what percentage of the overall flight emissions should be attributed to the Airport as opposed to other origins and destinations of the aircraft. In summary, this EIR utilizes the most reliable and widely accepted methodology for estimating GHG emissions from aircraft activity, and any attempt to estimate emissions beyond those calculated by AEDT would be speculative due to the level of uncertainty involved in the underlying assumptions.

Auxiliary Power Units: AEDT does not estimate GHG emissions from APUs. Based on engineering estimates, it was determined that APU emissions would not constitute more than one percent of the overall GHG inventory. Further, while at the gates, aircraft currently use electricity provided by the Airport; this practice will be continued so aircraft do not use their APUs at the gates.

Ground Support Equipment: Emissions from GSE equipment, including air conditioners, air starts, aircraft tractors, baggage tractors, belt loaders, cabin service trucks, cargo loaders, carts, catering trucks, fork lifts, fuel trucks, generators, ground power units, hydrant trucks, lavatory trucks, lifts, service trucks and water trucks, were calculated. AEDT does not estimate GHG emissions for GSE; therefore, GSE emissions were calculated based on Airport fuel use records for 2018 using USEPA's fuel-based GHG emission factors.[137] AEDT contains default aircraft GSE assignments for fuel type, operating time, horsepower and load factor. Project (2037) fuel use was scaled from baseline (2018) using the operating hours calculated in AEDT for each fuel type. Electrification conservatively was assumed to be constant between the two scenarios. These data were used to determine overall GSE usage at the Airport per year.

Passenger and Worker Traffic: Emissions from traffic (including parking lot traffic) were calculated by utilizing trip generation rates and vehicle miles travelled for airport-related vehicle transportation, as determined by the traffic analysis completed for the Project (refer to Section 4.17 of this EIR). EMFAC2017 emission factors and average EMFAC2017 fleet mixes for existing and Project scenario years (2018 and 2037) were utilized.

Airport Shuttle Buses: In the baseline year for this analysis (2018), the Airport operated 10 shuttle buses running on compressed natural gas (CNG) fuel. Calculations of shuttle bus emissions in the

[137] USEPA. Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf. Accessed April 2019.

existing/baseline scenario are based on actual fuel usage and emission factors from EMFAC2017. In May 2019, the Airport electrified its shuttle bus fleet. As a result, shuttle buses would not result in GHG emissions in the Project scenario (2037).

Airport-Owned Airside Equipment: GHG emissions from Airport owned and operated (non-GSE) off-road equipment were calculated by utilizing fuel consumption data for the Airport. This equipment includes sweepers, mowers, runway closure markers, and generators that are powered by diesel and gasoline fuels.

Boilers: The majority of natural gas consumption at the Airport occurs in three natural gas-fired boilers in the Central Plant. Natural gas usage at the Central Plant was based on utility readings for 2018. GHG emissions were calculated based on emission factors from USEPA's "Emissions Factors for Greenhouse Gas Inventories".[138] Fuel usage for 2037 was scaled by the change in annual passengers at the Airport.

Miscellaneous Natural Gas Combustion: A small portion of natural gas consumption occurs in miscellaneous sources at the Airport. These include sources such as small furnaces, small water heaters, and kitchens. Natural gas usage for non-Central Plant uses was based on utility readings for 2018. GHG emissions were calculated based on emission factors from USEPA's "Emissions Factors for Greenhouse Gas Inventories".[139] Fuel usage for 2037 was scaled by the change in annual passengers at the airport.

Emergency Generators: There are 20 diesel-fired emergency generators and fire pumps at the Airport. Operating hours and horsepower for each generator in 2018 was used for the emission calculations. GHG emissions were calculated based on diesel emission factors from 40 CFR Part 98 (Federal Mandatory Reporting Rule). No changes in emergency generator hours of operation are assumed for the Project.

Electricity: GHG emissions from electricity were calculated based on existing (2018) data for the Airport and the projected increase in passengers.

Water Supply, Treatment and Distribution: Indirect GHG emissions result from the production of electricity used to convey, treat and distribute water and wastewater. The amount of electricity required to convey, treat and distribute water depends on the volume of water, as well as the sources of the water. Additional emissions from wastewater treatment include CH_4 and N_2O, which are emitted directly from the wastewater. GHG emissions from water were calculated based on existing (2018) data for the Airport and the projected increase in passengers.

Solid Waste: Municipal solid waste (MSW) is the amount of material that is disposed of by landfilling, recycling, or composting. CalEEMod calculates the indirect GHG emissions associated with waste that is disposed of at a landfill in quantities that are based upon land use type according to waste disposal

[138] USEPA. Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf, Accessed April 2019.

[139] USEPA. Emission Factors for GHG Inventories, March 2018. Available at: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf, Accessed April 2019.

studies conducted by CalRecycle. The emission estimates for the Project were based on the existing (2018) conditions solid waste generation data, which was used to calculate the waste generated per passenger. Project emissions were based on that ratio and the increases in passengers projected in 2037.

Operational Emissions from Hotel Land Use: Emissions associated with the proposed on-Airport hotel were calculated using CalEEMod defaults for that land use.

Total GHG Emissions Estimate

As shown in Table 4.8-3**,** operational emissions associated with the Project would be approximately 388,102 MT CO_2e/year in 2037, representing an increase of approximately 130,297 MT CO_2e/year over existing/baseline conditions. The Project's incremental increase in operational GHG emissions is wholly attributable to emissions resulting from the anticipated increases in the aircraft-operation levels, with aircraft emissions increasing from 139,083 MT CO_2e per year in 2018 to 270,977 MT CO_2e per year in 2037. Setting aside the aircraft emissions, GHG emissions from all other sources in the Project's build-out year would be less than GHG emissions under existing/baseline conditions by approximately 1,597 MT CO_2e/year. The decrease in non-aircraft GHG emissions from 2018 to 2037 is attributable to the Airport's conversion to an electric-powered shuttle bus fleet, a higher percentage of cleaner/low emission vehicles, and the greater use of electricity generated from carbon-free sources.

Table 4.8-3: Project GHG Emissions

Source		Existing CO2e (MT/year)	Project CO2e (MT/year)	Net CO2e (MT/year)
Aircraft and GSE				
Aircraft		139,083	270,977	131,894
GSE	Gasoline	912	1,313	402
	Diesel	1,232	1,664	433
Mobile Sources				
Traffic		108,071	106,858	-1,213
Airport Shuttles		1,051	66	-1,435
Airside (Off-Road) Equipment	Gasoline	30	46	16
	Diesel	47	72	25
Stationary Sources				
Boilers		1,050	1,597	546
Miscellaneous Natural Gas Combustion		98	149	51
Emergency Generators		121	121	0
Utilities				
Electricity		5,475	2,528	-2,947
Water		17	8	-9
Waste		168	255	87
New Land Use				
Hotel		--	2,447	2,447
Total Annual Emissions		**257,805**	**388,102**	**130,297**

As described previously, since the existing Airport facilities could accommodate the forecasted 2037 activity levels, the Project does not create the new aircraft or traffic related emissions since they would occur with or without the Project (refer to Section 3.0 for a detailed discussion of this matter). In other words, these are not entirely "new" emissions, since the Project does not itself create the additional demand for passenger air travel. The additional air travel demand is a result from the projected growth of jobs and housing in the region per the approved general plans of the cities and counties. Nevertheless, the emissions from aircraft activity and associated passenger travel to and from the Airport are indirectly associated with the Project and are conservatively evaluated in this EIR as impacts from the Project.

Construction and operation of the Project would result in increases in GHG emissions released into the environment. There is no scientific or regulatory consensus regarding what particular quantity of GHG emissions is environmentally significant. Further, no agency with regulatory authority and expertise, such as CARB or BAAQMD, has adopted numeric GHG thresholds for airports for purposes of CEQA. And, while global climate change is widely viewed as a cumulative problem warranting international treatment and regulation, no authoritative regulatory body has yet devised a numeric emissions cap that can be applied at the project level for airports since aircraft GHG emissions are beyond the control of airports. Nonetheless, in light of the Project's incremental increase in GHGs above existing and proposed conditions, the Project's GHG emissions are considered significant.

As described in Section 4.3.2.6 and shown in Table 4.3-4, the Airport currently implements a multitude of emissions reductions measures, including measures that reduce GHG emissions. Examples of existing measures that reduce GHG emissions include:

- LEED Design. The expansion of Terminal B's South Concourse shall be designed to achieve LEED Silver certification or equivalent. Additionally, the proposed hotel shall be designed to achieve LEED Silver certification or equivalent.[140]
- LEED Facilities. Construction of any building greater than 10,000 ft^2 is to achieve LEED standards with green features such as natural lighting, occupancy sensors for lighting, a programmable lighting control system, high efficiency programmable "smart" heating and cooling system, energy-conserving windows, a high-efficiency ventilation system, recycled construction materials, and water conservation measures that result in 75% less water used than in a conventional building.[141]
- Electrified Airport Shuttle Fleet. On May 3, 2019, San José commissioned the San José Airports 10 battery-electric shuttle buses, which previously ran on compressed natural gas fuel. This is 15 years ahead of CARB's recently-adopted Zero-Emission Airport Shuttle Regulation, which requires airport shuttle fleets to be 100% zero-emission vehicles (battery electric or fuel cell) by 2035.[142]
- Airside Operations. Since 1998, all airlines are encouraged to perform single or reduced engine taxiing in order to reduce emissions produced by the aircraft.

[140] City of San Jose. 2019. Green Buildings. Available at: http://www.sanjoseca.gov/index.aspx?NID=1517. Accessed: June 2019.
[141] City of San Jose. 2019. Green Buildings. Available at: http://www.sanjoseca.gov/index.aspx?NID=1517. Accessed: June 2019.
[142] CARB. 2018. Proposed Regulation Order for the Proposed Zero-Emission Airport Shuttle Regulation. Available at: https://www.arb.ca.gov/regact/2019/asb/appa.pdf?_ga=2.255035912.1469842448.1555030954-893091953.1554304459. Accessed: April 2019.

- Alternate-Fuel Maintenance Fleet. Since 2000, the Airport has adopted a policy to purchase only alternate-fuel vehicles for airport operations and maintenance fleet. Currently, 25% of the fleet is clean energy-powered as opposed to conventionally-powered vehicles.
- Construction Pollution Abatement. An ongoing effort of the Airport has been the implementation of a Construction Project Pollutant Emissions Abatement Program. This program requires measures to minimize emissions from vehicles and equipment to be included in all construction plans.
- Energy-Efficient Lighting. All lightbulbs in Airport facilities and buildings will be energy-efficient, reducing emissions associated with the generation of electricity.
- Green Cleaning. An ongoing policy of the Airport is to use green-seal-certified cleaning products which improves indoor air quality and reduces emissions.
- Clean Energy. Initiated in Fall 2018, the Airport adheres to the *San José Clean Energy* Program which designates that electricity purchased for Airport facilities will be 45% renewable and 80% carbon free.
- Employee Transportation: Since 1998, the Airport has provided free bus/rail passes to employees which allows unlimited use of VTA's bus and light rail transit systems. Encouraging the 3,500+ employees of the Airport to use transit systems reduces emissions of commuting and traffic in the area.
- Ground Transportation: The Airport provides a free shuttle bus service connecting to the Metro LRT Station and Santa Clara CalTrain Station, operating every 10-15 minutes to promote public transportation as a means of travel.
- Cell Phone Lots: A second cell phone waiting lot was completed in 2018 to encourage drivers picking up passengers to wait in the designated lot rather than circle the Airport.
- Electric Charging Stations: Construction of the initial station completed in 2001, progressively developing additional public electric vehicle stations to facilitate the use of EVs by drivers.
- Low- or Zero- Emission Taxis: Facilitated by a grant from the Airport and VTA, there is a requirement that at least 25% of all taxi/van trips to or from the Airport are to be by low- or zero-emission vehicles. Currently, 36% of the taxi fleet is alternate or clean fuel powered vehicles.
- Commercial Vehicles: Implemented in the 1990s, a "Commercial Vehicle Trip Fee" charges these types of vehicles for each trip they take to the Airport. This discourages unnecessary vehicles trips and endorses increased efficiency of each trip taken by the company.
- Taxi Dispatch: The Airport created a taxi dispatch system that requires taxis to park in designated areas until they are dispatched, which reduces engine idling and the associated emissions.
- Public Transport Education: Through the Airport's website and in the terminals, information on the public transit systems and information encourages usage of the transit systems which lowers emissions created by travelers.

In addition to the measures listed above, the Project would implement mitigation measure MM AIR-2.5, which requires that a minimum of 10 percent of the total number of spaces provided in the proposed short- and long-term parking garages (Projects T-4 and T-8, respectively) will be designed and constructed for electric vehicle charging capability (refer to Section 4.3.3.2).

As described previously, the Project's net increase in operational GHG emissions that is shown in Table 4.8-3 is due primarily to increases in aircraft activity. In other words, if aircraft emissions are

excluded, the Project would result in a net decrease in GHG emissions of approximately 1,587 MT CO_2e/year. This fact is important because, as explained in Section 3.0, the City is not in a position as lead agency to directly influence the amount of aircraft activity at the Airport. The federal Airline Deregulation Act of 1978 prohibits a state or local government's regulation of an air carrier's rates, routes, or services. As a result, the Airport cannot regulate the number of flights or the types of aircraft utilizing its facilities, as long as those flights and aircraft can be reasonably accommodated. The Airport, therefore, has no authority to directly mitigate GHG emissions associated with aircraft operations.

Notwithstanding the inability of the City to regulate aircraft activity at the Airport, the Airport Carbon Accreditation Program, developed by the Airports Council International (ACI) in 2008, provides a method for airports to voluntarily reduce GHG emissions. ACI's Airport Carbon Accreditation Program is a global carbon management program for airports that independently assesses and recognizes airports' efforts to manage and reduce their CO_2 emissions. The program provides airports with a common framework for active carbon management with measurable goalposts. There are four different levels of accreditation: Mapping, Reduction, Optimization and Neutrality.

- Level 1: Mapping. Requires carbon footprint measurement.
- Level 2: Reduction. Requires carbon management and progress towards a reduced carbon footprint.
- Level 3: Optimization. Requires third party engagement in carbon footprint reduction. Third parties include airlines and various service providers (i.e., independent ground handlers, catering companies, air traffic control and others working on the airport site). It also involves engagement on surface access modes (road, rail) with authorities and users.
- Level 3+: Neutrality. Requires neutralizing remaining direct carbon emissions by offsetting.

Numerous airport operators worldwide have used, and are using, the Airport Carbon Accreditation Program. To date, Level 3+, Neutrality, has been achieved by 55 airports globally, including two in North America (San Diego International and Dallas-Ft. Worth International).

Mitigation Measure: The Project shall implement the following measure to reduce GHG emissions:

MM GHG-1.1: The Airport shall develop and implement a phased carbon management program that is consistent with the standards of ACI "Level 3+" Airport Carbon Accreditation Program, or equivalent, including calculation of annual carbon emissions from Airport activity, identifying emissions reduction targets, tracking progress toward achieving effective carbon management procedures, and publishing a~~n annual~~ biennial carbon footprint report as a component of the Airport's broader environmental sustainability program.

Even with implementation of MM GHG-1.1 and other emissions reduction programs described above, the Project's incremental increase in GHG emissions is considered significant and unavoidable due to forecasted increases in aircraft activity beyond the City's control in operating the Airport. As described in Section 3.0, the decisions facing the City are whether, and how, to make improvements to the Airport to accommodate the increased activity or handle the increased activity within the framework of the existing Airport. **(Significant Unavoidable Impact)**

4.8.4.2 *Conflicts with GHG Plans and Policies*

Impact GHG-2:	**The Project would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions. (Significant Unavoidable Impact)**

Introduction

Because plans, policies, and regulations adopted for the purpose of reducing GHG emissions are often designed to increase energy efficiency and renewable energy usage, the analysis of whether a project would conflict with such plans in the context of GHG emissions mirrors the analysis of whether a project would conflict with the same plans in the context of energy. As a result, the discussion below is largely the same as the discussion in Section 4.6.2.2 of this EIR, which analyzes whether the project would conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

State Reduction Strategies

Applicable state GHG reduction strategies include: the California Renewables Portfolio Standard as most recently amended by SB 100, Title 24, Assembly Bill 1109, CalGreen Building Code, AB 1493 (Pavley), the Low Carbon Fuel Standard, Advanced Clean Cars Program, SB 375, Senate Bill X7-7, IWMA and AB 341. As shown in Table 4.8-4, the Project would be consistent with applicable state strategies for the reduction of GHG emissions.

Plan Bay Area 2040

Plan Bay Area 2040 is the San Francisco Bay Area's Sustainable Communities Strategy (SCS) developed pursuant to SB 375. It outlines the Bay Area's strategies for meeting the region's SB 375 goals. This includes the goals of 1) reducing per-capita CO_2 emissions from cars and light-duty trucks, and 2) providing sufficient housing for the entire region's projected population growth, regardless of income. As shown in Table 4.8-5, the Project would be consistent with applicable strategies for the reduction of GHG emissions in Plan Bay Area 2040. Furthermore, the Airport's ongoing commitments to transportation-related emissions reduction measures will help support Plan Bay Area 2040 as a whole (refer to Section 4.8.2.1 for a list of emissions reduction measures).

Climate Smart San José

Climate Smart San José is the City's plan for reducing air pollution, conserving water, and creating a stronger and healthier community. Climate Smart San José builds on the 15-year Green Vision sustainability plan by charting a path to achieve the GHG emissions reductions contained in the international Paris Agreement on climate change. Climate Smart San José focuses on energy, mobility, and water with nine key strategies. As shown in Table 4.8-6, the Project would be consistent with applicable strategies for the reduction of GHG emissions in Climate Smart San José.

Envision San José 2040 General Plan

The *Envision San José 2040 General Plan* centers on twelve Major Strategies that outline the city's plan for growth and taking on a growing environmental and economic leadership role. As shown in

Table 4.8-4: Project Consistency with Applicable State GHG Reduction Policies		
Sector/Source	**Strategy Description**	**Consistency Analysis**
Energy		
California Renewables Portfolio Standard (RPS) and SB 350	As most recently amended by SB 100 (2018), California's RPS increases the proportion of electricity from renewable sources to 33% renewable power by 2020; 50% renewable power by 2026; and, 60% renewable power by 2030. SB 350 (2015) also requires the State Energy Resources Conservation and Development Commission to double (by 2030) the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.	**Consistent.** The Project would not impair implementation of the state's RPS or the energy efficiency and conservation targets of SB 350. It also is noted that the Airport would use electricity provided by San José Clean Energy (SJCE), which is required to meet the state's RPS. SJCE is a nonprofit, locally-controlled electricity generation service provider; it is estimated that the City of San José will initially see an 18% reduction in GHG emissions from electricity generation as a result of its formation.
California Code of Regulations, Title 24, Part 6	Energy efficiency standards for residential and nonresidential buildings that are updated approximately every three years.	**Consistent.** The Project would meet the Title 24 energy efficiency standards in effect at the time of building permit application. In addition, the Project would construct new and upgraded terminal buildings and all buildings with an occupied space greater than 10,000 ft^2 to achieve LEED Silver standards. This is in line with the City's New Construction Green Building Requirements.
Assembly Bill 1109	The Lighting Efficiency and Toxics Reduction Act (AB 1109) requires a reduction in average statewide electrical energy consumption by not less than 50% from the 2007 levels for indoor residential lighting and not less than 25% from the 2007 levels for indoor commercial and outdoor lighting by 2018.	Consistent. The Project would meet the applicable requirements of AB 1109. In addition, the Airport would replace existing lighting at Airport facilities and in Airport buildings with energy-efficient lighting.
California Code of Regulations, Title 24, Part 11	The CalGreen Building Standards Code establishes green building standards for residential and nonresidential buildings to meet the goals of AB 32, including requirements for site development, water use reduction, construction waste reduction, disposal and recycling, and building maintenance & operation.	**Consistent.** The Project would meet the CalGreen Building Standards Code in effect at the time of building permit application. In addition, the Project would construct new and upgraded terminal buildings and all buildings with an occupied space greater than 10,000 ft^2 to achieve LEED Silver standards.
Mobile Sources		
AB 1493 (Pavley Regulations)	Reduces GHG emissions in new passenger vehicles from model years 2012-2016 (Phase I) and model years 2017–2025 (Phase II). Also reduces gasoline consumption to a rate of 31% of 1990 gasoline consumption (and associated GHG emissions) by 2020.	**Consistent.** The Project would not impair implementation of the AB 1493 regulations
Low Carbon Fuel Standard (LCFS)	Establishes protocols for measuring and reducing the lifecycle carbon intensity of transportation fuels and helps to establish use of alternative fuels.	**Consistent.** The Project would not conflict with implementation of the LCFS. The Project also would construct public accessibly electric vehicle (EV) charging stations, which is consistent with the LCFS because it promotes the purpose of the LCFS to reduce the full fuel-cycle, carbon intensity of the transportation fuel pool used in California. Under the LCFS, electric vehicles

Table 4.8-4: Project Consistency with Applicable State GHG Reduction Policies		
Sector/Source	**Strategy Description**	**Consistency Analysis**
		carbon intensity is equal to the electricity grid, which is decreasing due to the influx of renewable electricity generation. In addition, the Project adopted a policy to purchase only alternate-fuel vehicles for the airport operations and maintenance vehicle fleet, which reduces emissions associated with conventionally-powered vehicles. Since 2000, 25% of the Airport's vehicle fleet is alternate fuel or clean energy-powered.
Advanced Clean Cars (ACC) Program	In 2012, CARB adopted the ACC program to reduce criteria pollutant emissions and GHG emissions for model year vehicles 2015 through 2025. ACC includes the Low-Emission Vehicle (LEV) regulations that reduce criteria pollutants and GHG emissions from light and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulations that require manufacturers to produce an increasing number of pure ZEVs, with provisions to also produce plug-in hybrid electric vehicles (PHEV) in the 2018 through 2025 model years.	**Consistent.** The Project would not conflict with implementation of the ACC program. The Project's construction of 10% of parking spaces in the new garages for EV charging capability also would be consistent with the objective of the ZEV regulations to facilitate fleet turnover from internal combustion engine vehicles to alternatively fueled vehicles.
SB 375	SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. Under SB 375, CARB is required, in consultation with the state's Metropolitan Planning Organizations, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035.	**Consistent.** Table 4.8-5 demonstrates the Project's consistency with SB 375 through its consistency with the Plan Bay Area 2040. Table 4.8-5 also describes the Project's relevant transportation-related mitigation measures.
Water		
Senate Bill X7-7	The Water Conservation Act of 2009 sets an overall goal of reducing per capita urban water use by 20% by 12/31/20. Each urban retail water supplier shall develop water use targets to meet this goal.	**Consistent.** The Project will meet the CalGreen Building Standards Code in effect at the time of building permit application; these standards include water conservation measures. Also of note, the San José Water Company provides water to the Airport and has sufficient supply to meet the projected demands of the Airport over the studied planning horizon. The San José Water Company has implemented a robust water conservation program since the early 1990s and encourages customers to reduce water consumption by 20%. It also is noted that the Airport uses recycled water for toilet flushing and landscaping, which consists of primarily native and drought tolerant plants to reduce water use. Recycled water is treated and provided by South Bay Water Recycling (SBWR), which is a City agency with a network of over 100 miles of purple pipes throughout Santa Clara County.

Table 4.8-4: Project Consistency with Applicable State GHG Reduction Policies		
Sector/Source	**Strategy Description**	**Consistency Analysis**
Solid Waste		
California Integrated Waste Management Act (IWMA) of 1989 and AB 341.	The IWMA mandated that state agencies develop and implement an integrated waste management plan which outlines the steps to be taken to divert at least 50% of their solid waste from disposal facilities. AB 341 directs CalRecycle to develop and adopt regulations for mandatory commercial recycling and sets a statewide goal for 75% disposal reduction by the year 2020.	**Consistent.** The Project will utilize the Airport's existing recycling and waste diversion programs, and will be served by the City of San José's contract with San José Green Team and Green Waste. The Airport has a goal for zero waste by 2022 and, by implementing existing recycling programs and waste separation, the Airport currently diverts 85% of its waste from landfill trash. In accordance with the Zero Waste International Alliance definition that Zero Waste is diverting 90% of all discarded materials from landfills, incinerators, and the environment.
Note: Only the strategies that are relevant to the GHG emissions inventory are shown in this table.		

Table 4.8-5: Project Consistency with Applicable Plan Bay Area 2040 Actions & Strategies	
Goal	**Consistency Analysis**
Climate Protection. Transitioning to a post-carbon economy and achieving ambitious GHG reduction targets for 2030 and 2050 by first reducing per-capita CO_2 emissions from passenger vehicles by 2035.	**Consistent.** The SB 743 analysis prepared for the Proposed Project confirms that the Project-generated VMT would represent a small reduction from the baseline condition. The Airport adopted a policy to purchase only alternate-fuel vehicles for the airport operations and maintenance vehicle fleet, which reduces emissions associated with conventionally-powered vehicles. Since 2000, 25% of the Airport's vehicle fleet has been transitioned to alternate fuel or clean energy power. Furthermore, the Airport has implemented and continues to implement the following strategies to reduce GHG emissions from passenger vehicles: 1) completed a consolidated rental car facility in 2010, which has increased the efficiency of rental car movement and shuttle bus service to/from the facility; 2) has provided free bus and rail passes to Airport employees since 1998; 3) converted the shuttle bus fleet to compressed natural gas (CNG) in 2008; 4) purchased ten (10) electric shuttle buses in February 2019; 5) upgraded various on-Airport roadways to reduce congestion, delay and queueing; 6) has provided free shuttle bus service between the Airport and the Metro Light Rail Train (LRT) Station and Santa Clara CalTrain Station since 1998; 7) constructed publicly-accessible electric vehicle (EV) charging stations; 8) requires at least 25% of all taxi/van trips to and from the Airport to be by low- or zero-emission vehicles; and, 9) disseminates information on public transit systems in the Airport terminals and on the Airport's website.
Transportation System Effectiveness. Increasing the use of non-auto modes, such as public transport, walkability, and bikeability.	**Consistent.** As described above, the Airport provides free bus/rail passes to employees to allow unlimited use of VTA's bus and LRT systems, provides a free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station, and encourages public transit by disseminating information on public transit systems in Airport terminals and on Airport website. The Airport has facilitated bicycle access to the Airport through the construction of a bike lane around the north end of the airfield and construction of a connection to the Guadalupe River Trail at Airport Parkway. The Airport is currently installing two sets of bicycle lockers in the terminal area for public use, one in the Terminal A baggage claim facility, and one in Hourly Parking Lot 3 directly opposite Terminal B. Bicycle parking for employees at the Airport is also provided within individual facilities.

Table 4.8-5: Project Consistency with Applicable Plan Bay Area 2040 Actions & Strategies	
Goal	**Consistency Analysis**
Transportation. Reducing transportation related emissions of GHGs that cause climate change.	**Consistent.** The Airport adopted a policy to purchase only alternate-fuel vehicles for the airport operations and maintenance vehicle fleet wherever practical, which reduces emissions associated with conventionally-powered vehicles. Since 2000, 25% of the Airport's vehicle fleet has been transitioned to alternate fuel or clean energy power. In addition, the Airport has implemented and continues to implement the strategies listed in this first section of this table to reduce GHG emissions from passenger vehicles:
Note: Only the strategies that are relevant to the GHG emissions inventory are shown in this table.	

Table 4.8-6: Project Consistency with Applicable Climate Smart San José Measures	
Goal	**Consistency Analysis**
Pillar 1: A Sustainable and Climate Smart City	
Transitioning to a renewable energy future provides clean electricity that supplies the entire city	**Consistent.** The Airport receives electricity from San José Clean Energy (SJCE). Electricity sourced by SJCE is 80% carbon free, with options to upgrade to 100 percent renewable energy. While SJCE sources cleaner energy from various carbon-free options like solar, wind, and hydropower, it is expected to supply the electricity to the California State's electricity grid, which will then be transmitted and delivered by PG&E. In addition, in 2010, the Airport constructed a 1-megawatt photovoltaic system on the roof of the new consolidated rental car facility, which provides 20% of the rental car facility's power.
Embracing our Californian climate means creating an urban landscape, in our homes and public places, that is not just low water use, but attractive and enjoyable	**Consistent.** The Airport uses recycled water for toilet flushing and landscaping, which consist of primarily native and drought tolerant plants to reduce water use. Recycled water is treated and provided by South Bay Water Recycling (SBWR), which is a City agency with a network of over 100 miles of purple pipes throughout Santa Clara County.
Pillar 2: A Vibrant City of Connected and Focused Growth	
Densifying our city in focused growth areas increases walkability and cycling and also makes our neighborhoods more vibrant, distinctive, and enjoyable	**Consistent.** The Airport supports sustainable land use by providing free bus/rail passes to employees to allow unlimited use of VTA's bus & LRT systems, providing a free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station, and encouraging public transit by disseminating information on public transit systems in Airport terminals and on the Airport's website. The Airport has facilitated bicycle access to the Airport through the construction of a bike lane around the north end of the airfield and construction of a connection to the Guadalupe River Trail at Airport Parkway. The Airport is currently installing two sets of bicycle lockers in the terminal area for public use, one in the Terminal A baggage claim facility, and one in Hourly Parking Lot 3 directly opposite Terminal B. Bicycle parking for employees at the Airport is also provided within individual facilities.
New technology can enable clean, electric, and personalized mobility choices that make it convenient to move between any two points in the city	**Consistent.** The Airport has implemented several initiatives to enable clean, electric, and personalized mobility choices, such as the following: 1) publicly-accessible electric vehicle (EV) charging stations; 2) a consolidated rental car facility; 3) a CNG fueling station; 4) a taxi dispatch system; and 5) free shuttle bus service between the Airport and the Metro LRT Station and Santa Clara CalTrain Station. In addition, the Airport requires that at least 25% of all taxi/van trips to/from the Airport to be by low- or zero-emission vehicles, as facilitated by grants from the Airport and VTA.
Developing integrated, accessible public and	**Consistent.** The Airport supports public transit by providing free bus/rail passes to employees to allow unlimited use of VTA's bus and LRT systems, providing a free

Table 4.8-6: Project Consistency with Applicable Climate Smart San José Measures	
Goal	**Consistency Analysis**
active transport infrastructure reduces the dependency on the car to move within the city.	shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station, and encouraging public transit by disseminating information on public transit systems in Airport terminals and on Airport website.
Pillar 3: An Economically Inclusive City of Opportunity	
Creating local jobs in our City makes it possible for our residents to work close to where they live, saving time, money, and gas spent commuting	**Consistent**. The expansion of the Airport to accommodate the projected demand for aviation services would lead to more jobs within the City. New Airport employees, like existing employees, would be provided with access to free bus/rail passes, which include unlimited use of VTA's bus & LRT systems and free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station.
Making our commercial buildings high-performance and siting them close to transit lowers water and energy use	**Consistent.** The Project would construct new and upgraded terminal buildings and all buildings with an occupied space greater than 10,000 square feet would be designed to achieve LEED Silver standards. The Airport also supports public transit use via implementation of the strategies described in concert with the evaluation of Project consistency with strategies considered above.
Moving commercial goods through our city more efficiently with new technology and fleet management practices	**Consistent.** The Airport facilitates goods movement within the city via cargo operations. Reductions associated with this measure are in line with State's Scoping Plan.
Note: Only the strategies that are relevant to the GHG emissions inventory are shown in this table.	

Table 4.8-7: Project Consistency with Applicable Envision San José 2040 Policies		
#	**Strategy**	**Consistency Analysis**
Measurable Environmental Sustainability		
MS-1	Green Building Policy Leadership	**Consistent.** The Project would be consistent with the City, State, and Regional policies incorporating various green building design and operation principles and sustainable construction practices as discussed in Tables 4.8-4, 4.8-5, and 4.8-6. For example, the Project would construct new and upgraded terminal buildings and all buildings with an occupied space greater than 10,000 ft^2 to achieve LEED Silver standards. In addition, the Airport would replace existing lighting at Airport facilities and in Airport buildings with energy-efficient lighting.
MS-2	Energy Conservation and Renewable Energy Use	**Consistent.** The Project would be consistent with the City, State, and Regional policies incorporating energy conservation and renewable energy use as discussed in Tables 4.8-4, 4.8-5, and 4.8-6. For example, the Airport is served by the San José Clean Energy Program; electricity purchased for Airport facilities will be the default GreenSource mix of 45% renewables and 35% hydropower, which is 80% carbon free.
MS-3	Water Conservation and Quality	**Consistent.** In addition to meeting City, State, and Regional policies on water conservation, as described in Tables 4.8-4, 4.8-5, and 4.8-6, the Airport uses recycled water for toilet flushing and landscaping, which consist of primarily native and drought tolerant plants to reduce water use.
MS-5	Waste Diversion	**Consistent.** In addition to meeting City, State, and Regional policies on waste diversion, as described in Tables 4.8-4, 4.8-5, and 4.8-6, the Airport has a goal for zero waste by 2022 in its operations. By implementing composting and

Table 4.8-7: Project Consistency with Applicable Envision San José 2040 Policies		
#	**Strategy**	**Consistency Analysis**
		recycling programs, the Airport is currently diverting 85% of waste from landfill trash.
MS-6	Waste Reduction	**Consistent.** In addition to meeting City, State, and Regional policies on waste reduction, as described in Tables 4.8-4, 4.8-5, and 4.8-6, the Airport has a goal for zero waste by 2022 in its operations. By implementing composting and recycling programs, the Airport is currently diverting 85% of waste from landfill trash.
MS-7	Environmental Leadership and Innovation	**Consistent.** The Airport has implemented and continues to implement a number of programs that demonstrate it is an environmental leader and furthers innovation. For example, in addition to the programs and strategies described above in Tables 4.8-4, 4.8-5, and 4.8-6, the Airport supports the Guadalupe River Trail, which runs adjacent to the airfield and is part of the San José Green Vision Goal of creating 100 miles of interconnected trails. There are 20 storage spaces for bikes that are available near the Airport terminals for customers, travelers, and workers that are easily accessible from the Guadalupe River Park trail. The Airport also was the first airport in the western U.S. to be awarded a Voluntary Airport Low Emissions (VALE) grant by the FAA in 2009. Receipt of that multi-million-dollar grant, in conjunction with the Airport's modernization program, allowed for 28 aircraft gates to be equipped with preconditioned air and ground power, which enables airlines to reduce their use of jet and diesel fuel while aircraft are parked at the gate. The VALE grant also enabled the Airport to purchase 11 off-road electric vehicles.
MS-8	Environmental Stewardship	**Consistent**. The Airport has implemented and continues to implement a number of programs that demonstrate a commitment to environmental stewardship. In addition to the programs and strategies described above in Tables 4.8-4, 4.8-5, and 4.8-6, for example, the Airport manages a portion of the airfield for a resident population of Western Burrowing Owls, a California Species of Concern.
MS-10	Air Pollution Emission Reduction	**Consistent.** The Project is undergoing environmental review under CEQA, including an evaluation of air quality impacts consistent with the BAAQMD CEQA Guidelines, which incorporate state and federal standards. Feasible air emission reduction measures will be identified and implemented, as applicable. In addition, please see discussion above in Tables 4.8-4, 4.8-5, and 4.8-6 regarding various strategies pertaining to air pollution emission reduction from mobile sources.
MS-13	Construction Air Emissions	**Consistent.** The Project will follow basic construction mitigation measures from BAAQMD's CEQA Guidelines. In addition, the Airport or Airport's construction contractor will comply with the following engine requirements: 1) all off-road equipment greater than 25 horse power used in construction projects at the Airport shall have engines that meet Tier 4 Final off-road emission standards; 2) diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than two minutes, at any location, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment (e.g., traffic conditions, safe operating conditions; 3) the contractor shall post legible and visible signs in designated queuing areas and at the construction site to remind operators of the 2-minute idling limit; and 4) the contractor shall instruct construction workers and equipment operators on the maintenance and tuning of construction equipment, and require that such workers and operators properly maintain and tune equipment in accordance with manufacturer specifications.
MS-14	Reduce Consumption and Increase Efficiency	**Consistent.** The Project would be consistent with the City, State, and Regional policies incorporating various green building design and operation principles and sustainable construction practices as discussed in Tables 4.8-4, 4.8-5, and

Table 4.8-7: Project Consistency with Applicable Envision San José 2040 Policies		
#	**Strategy**	**Consistency Analysis**
		4.8-6. For example, the Project would construct new and upgraded terminal buildings and all buildings with an occupied space greater than 10,000 ft^2 to achieve LEED Silver standards. In addition, the Airport would replace existing lighting at Airport facilities and in Airport buildings with energy efficient lighting. These types of strategies, and others described above, serve to reduce the Airport's consumption of resources and increase efficiency.
MS-15 and MS-16	Renewable Energy and Energy Security	**Consistent.** The Project would be consistent with the City, State, and Regional policies addressing renewable energy and energy security, as discussed in Tables 4.8-4, 4.8-5, and 4.8-6. For example, the Airport is served by the San José Clean Energy Program; electricity purchased for Airport facilities will be the default GreenSource mix of 45% renewables and 35% hydropower, which is 80% carbon free. In addition, in 2010, the Airport constructed a 1-megawatt photovoltaic system on the roof of the new consolidated rental car facility, which provides 20% of the rental car facility's power.
MS-17	Responsible Management of Water Supply	**Consistent.** In addition to meeting City, State, and Regional policies on water conservation, as described in Tables 4.8-4, 4.8-5, and 4.8-6, the Airport uses recycled water for toilet flushing and landscaping, which consist of primarily native and drought tolerant plants to reduce water use.
MS-18	Water Conservation	**Consistent.** In addition to meeting City, State, and Regional policies on water conservation, as described in Tables 4.8-4, 4.8-5, and 4.8-6, the Airport uses recycled water for toilet flushing and landscaping, which consist of primarily native and drought tolerant plants to reduce water use.
MS-21	Community Forest	Consistent. The Project would provide appropriate landscaping consistent with San José's Community Forest policies.
General Land Use Policies		
LU-1	General Land Use	Consistent. The Airport is part of the City's existing land use pattern. This Project would facilitate the ability of the Airport to meet the projected demand for aviation services, and thereby minimize the need for members of the traveling public to utilize other major commercial airports in the Bay Area region (such as SFO and OAK). The Airport has facilitated bicycle access to the Airport through the construction of a bike lane around the north end of the airfield and construction of a connection to the Guadalupe River Trail at Airport Parkway. The Airport is currently installing two sets of bicycle lockers in the terminal area for public use, one in the Terminal A baggage claim facility, and one in Hourly Parking Lot 3 directly opposite Terminal B. Bicycle parking for employees at the Airport is also provided within individual facilities.
General City Design		
CD-2, CD-3, and CD-5	Function and Connections	**Consistent.** The Airport supports sustainable land use by providing free bus/rail passes to employees to allow unlimited use of VTA's bus & LRT systems, providing a free shuttle bus service connecting the Airport with the Metro LRT Station and Santa Clara CalTrain Station, and encouraging public transit by disseminating information on public transit systems in Airport terminals and on Airport website. The Airport has facilitated bicycle access to the Airport through the construction of a bike lane around the north end of the airfield and construction of a connection to the Guadalupe River Trail at Airport Parkway. The Airport is currently installing two sets of bicycle lockers in the terminal area for public use, one in the Terminal A baggage claim facility, and one in Hourly Parking Lot 3 directly opposite Terminal B. Bicycle parking for employees at the Airport is also provided within individual facilities.

Table 4.8-7: Project Consistency with Applicable Envision San José 2040 Policies		
#	**Strategy**	**Consistency Analysis**
Balanced Transportation System		
TR-1 thru TR-10	Balanced Transportation System	**Consistent.** See Table 4.8-4 for discussion of the balanced transportation options made available to members of the traveling public, as well as Airport employees. The Airport has facilitated bicycle access to the Airport through the construction of a bike lane around the north end of the airfield and construction of a connection to the Guadalupe River Trail at Airport Parkway. The Airport is currently installing two sets of bicycle lockers in the terminal area for public use, one in the Terminal A baggage claim facility, and one in Hourly Parking Lot 3 directly opposite Terminal B. Bicycle parking for employees at the Airport is also provided within individual facilities.
Appendix 8. GHG Reduction Strategy for the City of San José, dated June 2011		
1	City Initiated Actions to Reduce GHGs	**Consistent.** The Project Plan would be consistent with the Climate Smart SJ measures as listed in Table 4.8-5.
2	GHG reductions through implementation of the Land Use Transportation/ Diagram	**Consistent:** The Project would be consistent with the Envision San José 2040 land use (LU) measures by accommodating projected growth in aviation demand at an existing airport facility within the City's jurisdictional boundaries.
3	GHG emission reductions attributed to General Plan policies	**Consistent:** The Project would be consistent with the Climate Smart SJ measures as listed in Table 4.8-5 and the Envision San José 2040 measures as listed in this table above.
Note: Only the strategies that are relevant to the GHG emissions inventory are shown in this table.		

Table 4.8-7, the Project would be consistent with applicable strategies for the reduction of GHG emissions in Envision San José 2040 General Plan.

Statewide Emissions Reduction Targets

Studies have shown that, in order to meet the statewide 2050 reduction target, aggressive and economywide technological changes in the transportation and energy sectors, including electrification of the vehicle fleet and decarbonization of electricity and fuel sources, will be required among many other possible measures.[143] One study indicated that, even with these emerging technologies, the 2050 goal will not be met, due to the population growth to 55 million by 2050.[144] A more recent study, however, shows that the existing and proposed regulatory framework will allow the State to reduce GHG emissions to 40 percent below 1990 levels by 2030, and to 60 percent below 1990 by 2050.[145] Even though this study did not provide a regulatory and technology roadmap to achieve the 2050 target,

[143] Lawrence Berkeley National Laboratory (LBL). 2011. California's Energy Future – The View to 2050. May 2011. Available at: http://ccst.us/publications/2011/2011energy.php. Accessed: March 2019.

[144] LBL. 2013. Estimating Policy-Driven Greenhouse Gas Emissions Trajectories in California: The California Greenhouse Gas Inventory Spreadsheet (GHGIS) Model. Available at: http://eetd.lbl.gov/publications/estimating-policy-driven-greenhouse-g. Accessed: April 2019.

[145] Jeffery Greenblatt. 2015. Modeling California Impacts on Greenhouse Gas Emissions. Energy Policy. Volume 78, May 2015, pages 158-172. Abstract available at: http://www.sciencedirect.com/science/article/pii/S0301421514006892. Accessed: April 2019.

it demonstrated that various combinations of policies could allow statewide emissions to remain very low through 2050, suggesting that the combination of new technologies and other regulations not analyzed in the study could allow the State to meet the 2050 target. The 2017 Scoping Plan also discusses how "the State can reach our 2030 climate target to reduce greenhouse gas (GHG) emissions by 40 percent from 1990 levels, and substantially advance toward our 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels."[146]

Statewide efforts are underway to facilitate the State's achievement of its 2050 target and it is reasonable to expect the Project's emissions to decline as the regulatory initiatives identified by CARB in its Scoping Plan are implemented, new regulatory programs or incentives are devised to reduce GHG emissions, and other technological innovations occur. Many of these initiatives include reducing the carbon content of motor fuels and fuels for electricity generation.[147] Reducing the carbon content of motor fuels and fuels for electricity generation will reduce CO_2e emissions from this Project over time.

For example, CARB's 2014 First Update "lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050." And, many of the emission reduction strategies recommended by CARB would serve to reduce the Project's buildout (2037) emissions level to the extent applicable by law:

- Energy Sector: Continued improvements in California's appliance and building energy efficiency programs and initiatives would serve to reduce the Project's emissions level. Additionally, further additions to California's renewable resource portfolio would favorably influence the Project's emissions level.
- Transportation Sector: Anticipated deployment of improved vehicle efficiency, zero emission technologies, lower carbon fuels, and improvement of existing transportation systems all will serve to reduce the Project's emissions level.
- Water Sector: The Project's emissions level will be reduced as a result of further desired enhancements to water conservation technologies.
- Waste Management Sector: Plans to further improve recycling, reuse and reduction of solid waste will beneficially reduce the Project's emissions level.

In addition, it is important to note that a portion of the Project's GHG emissions are related to sectors that are covered by the California Cap-and-Trade program. Emissions from major GHG-emitting sources, such as electricity generation, fuel distributors (e.g., natural gas and propane fuel providers and transportation fuel providers), and large stationary sources are capped under the rules of the Cap-and-Trade program, and the majority of policy proposals developed by CARB and other State agencies pursuing GHG emissions-reducing strategies are designed to secure reductions from these sectors well into the future.

[146] CARB, 2017. California's 2017 Climate Change Scoping Plan. Available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed: April 2019

[147] The extent to which GHG emissions from traffic at the project will change in the future depends on the quantity (e.g., number of vehicles, average daily mileage) and quality (i.e., carbon content) of fuel that will be available and required to meet both regulatory standards and residents' needs. In addition, renewable power requirements, low carbon fuel standards, and vehicle emissions standards discussed above will all decrease GHG emissions per unit of energy delivered or per vehicle mile travelled.

The Project's emissions total at build-out (2037) represents the maximum emissions inventory for the Project as California's emissions sources are being regulated (and foreseeably expected to continue to be regulated in the future) in furtherance of the State's environmental policy objectives. Indeed, in light of the above, the Project's emissions at Project buildout (2037) would likely be lower than the inventory presented in this report which is calculated in the absence of continued regulatory and technological advancements.

Further, the Project design itself advances many of the State's primary policies directed towards the reduction of GHG emissions (refer to Table 4.3-4 and the list of measures in Section 4.8.2.1).

Note that approximately 28 percent of the Project's emissions profile is attributable to non-aviation transportation-related emissions (e.g., emissions from passenger vehicles). As described in the Transportation Analysis prepared for the Project (refer to Section 4.17), the Airport's VMT per passenger in 2037 would not exceed the baseline (2018) VMT per passenger. Further, when viewed in the cumulative setting, the Project would reduce regional VMT as compared to regional VMT without the Project, illustrating the benefits of serving the region with increased passenger capacity through the Airport to avoid additional further travel to the other Bay Area Airports.

Nonetheless, because the Project overall would increase GHG emissions by approximately 51 percent when compared to existing/baseline conditions, the Project would conflict with the State's efforts to reduce statewide GHG emissions through the State's 2050 planning horizon year.

Impact Determination

While the Project would represent an increase in GHG emissions when compared to the existing conditions at the Airport, accommodating California's growing demand for aviation-related services at this Airport location is more efficient than exporting that demand to other regional airports, if those airports could even handle the increased demand. As stated previously, the increase in aircraft activity, whether air passengers flights, air cargo flights, or general aviation, is occurring at the Airport but is reflective of regional growth in population and economic activity, within San José and surrounding communities in Silicon Valley as a whole that are served by the Airport.

The City's decision-making does not revolve on whether the increased activity will occur, but rather how the Airport would, or should, be physically modified to accommodate the increased activity in a manner that creates a reasonable experience for passengers and ensures the safe, efficient operation of an international airport serving Silicon Valley. There could be no physical improvements made to the Airport (discussed in the Alternatives section as No Project – Existing Airport Alternative), the existing 1997 Master Plan could continue to be implemented (also discussed in Alternatives section as No Project – Existing 1997 Airport Master Plan Alternative), or the City could decide to adopt and implement the proposed Major Amendment to the Master Plan that is the subject of this EIR. The degree to which those alternatives decrease or increase GHG emissions is presented in the Alternatives section of this EIR (refer to Section 8.0).

Further, as discussed above, the Project would not impede or conflict with the City's General Plan, Climate Smart San José, and Plan Bay Area 2040. However, because the Project's incremental increase in GHG emissions would potentially conflict with statewide emission reduction targets, which strive to achieve long-range reductions in statewide emissions levels through 2050, the Project would

result in a significant impact. Even with implementation of MM GHG-1.1 and other emissions reduction measures, the Project's incremental increase in GHG emissions from aircraft activity serving the region as a whole would conflict with statewide emission reduction targets, resulting in a significant unavoidable impact. **(Significant Unavoidable Impact)**

4.8.4.3 *Cumulative Impacts*

Impact GHG-C:	**The Project would result in a cumulatively considerable contribution to a GHG emissions impact. (Significant Unavoidable Cumulative Impact)**

Past, present, and future development projects worldwide contribute to global climate change. No single project would be sufficient in size, by itself, to change the global average temperature. Due to the global nature of GHG emissions, a significant project level impact is equivalent to a significant cumulative impact. As discussed under Impacts GHG-1 and GHG-2, the Project would result in significant unavoidable GHG impacts. For these reasons, the Project would also result in a cumulatively considerable GHG impact. **(Significant Unavoidable Cumulative Impact)**

4.9 HAZARDS AND HAZARDOUS MATERIALS

The following discussion is based in part on a Hazardous Materials Assessment prepared by Cornerstone Earth Group, Inc. in October 2019. The report is included as Appendix H to this EIR.

4.9.1 Environmental Setting

4.9.1.1 *Introduction*

Hazardous materials encompass a wide range of substances, some of which are naturally-occurring and some of which are man-made. Examples include pesticides, herbicides, petroleum products, metals (e.g., lead, mercury, arsenic), asbestos, and chemical compounds used in manufacturing. Determining if such substances are present on or near project sites is important because, by definition, exposure to hazardous materials above regulatory thresholds can result in adverse health effects on humans, as well as harm to the natural environment.

Due to the fact that these substances have properties that are toxic to humans and/or the ecosystem, there are multiple regulatory programs in place that are designed to minimize the chance for unintended releases and/or exposures to occur. Other programs set forth remediation requirements at sites where contamination has occurred. The regulations are designed to reduce the risk associated with the human exposure to hazardous materials and minimize adverse environmental effects. State and Federal construction worker health and safety regulations require protective measures during construction activities that may expose construction workers to asbestos, lead, and/or other hazardous materials.

Hazardous waste generators and hazardous materials users in the City of San José are required to comply with regulations enforced by several Federal, State, and County agencies, as well as by the City itself.

4.9.1.2 *Regulatory Framework*

Federal

Hazardous Materials Transportation Act

Transportation of chemicals and hazardous materials is regulated by the U.S. Department of Transportation (DOT) under the Hazardous Materials Transportation Act. Hazardous materials regulations for the types of containers, labeling, record keeping, and other requirements for commercial movement of materials are contained in the Code of Federal Regulations (CFR) Title 49. Transportation requirements vary with the hazard class of each hazardous material. The regulation specifies restrictions on the type of hazardous materials that may be carried on aircraft and requires notification of airports where a transfer of the materials is planned.

Natural Gas Pipeline Safety Act of 1968

The Natural Gas Pipeline Safety Act, as amended, regulates pipeline transportation of natural (flammable, toxic, or corrosive) gas and other gases as well as the transportation and storage of

liquefied natural gas. This Act has been codified as 49 U.S.C. Chapter 601. Federal pipeline safety regulations include minimum safety performance standards published in 49 CFR Parts 190-199.

Federal Aviation Administration Regulations

FAA Regulations (14 CFR [Federal Aviation Regulations Part 77]) sets standards for obstructions to airspace. In general, the FAA is responsible for administering these regulations. However, as owner/operator of the Airport, the City is also required to comply with these and other FAA regulations and policies intended to protect the Airport and aircraft in flight from incompatible land uses that potentially create hazards or constraints to airport operations. FAA requires projects of a specific height in a given location to submit a notice for airspace safety review.

Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress in 1980. This law provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous wastes at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) in 1986.

One of the biggest changes instituted under SARA was the passage of the Emergency Planning and Community Right-To-Know Act. A separate law unto itself, it is commonly known as SARA Title III and it sets requirements for local and state emergency planning around hazardous chemicals, the right of the public to access information on chemical hazards in their community, and the reporting responsibilities for facilities that use, store, and / or release hazardous chemicals. It also requires that Material Safety Data Sheets be readily available in the workplace.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA), initially authorized in 1976, gives the USEPA the authority to control hazardous waste from "cradle-to-grave." This includes the generation, transportation, treatment, storage and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled the USEPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

Occupational Safety and Health Act

Worker health and safety and public safety are key issues when dealing with hazardous materials and wastes. Proper handling and disposal of hazardous material is vital if it is disturbed during project construction. The federal Occupation Safety and Health Administration (OSHA) and the California Division (Cal/OSHA) enforces worker health and safety regulations related to construction activities. Federal regulations are contained in 29 CFR). California's regulations are found in Title 8 of the California Code of Regulations (8 CCR). As a result of the Occupational Safety and Health Act, these regulations provide for inspections, citations, penalties, occupational injury reports, and labor

agreements. These regulations also contain standards for hazardous materials handling, including workplace conditions, employee protection requirements, first aid provisions, fire protection, and material handling and storage. Contaminated properties potentially are subject to special worker safety requirements to protect construction workers during demolition and excavation, and to protect investigation and cleanup workers who perform studies or remediation activities. In these instances, written Site Safety Plans are mandatory.

State

Department of Toxic Substances Control

The Department of Toxics Substances Control (DTSC) is responsible for overseeing the evaluation and cleanup of contaminated properties in the state of California. and establishes cleanup and action levels for subsurface contamination that are equal to, or more restrictive, than federal levels. The DTSC regulates remediation of sites where discharges to land could potentially present a public health risk. The USEPA authorizes the DTSC to carry out the RCRA program in California. Permitting, inspection, compliance, and corrective action programs in relation to hazardous waste management and disposal are overseen by the DTSC.

California State Water Quality Resources Control Board

The State Water Quality Control Board and its nine regional boards regulate discharges and releases to surface and groundwater and oversees cases involving groundwater contamination. The San Francisco Bay Regional Water Quality Control Board (RWQCB) is the regional board that has jurisdiction over the project area. In addition, the County of Santa Clara Department of Environmental Health (SCCDEH) serves as the regulatory Local Oversight Program for most cases involving petroleum leaking underground storage tanks (LUSTs). In the case of spills at the Airport, the responsible party would notify the SCCDEH and then a lead regulator would be determined.

The RWQCB has developed guidelines, known as Environmental Screening Levels (ESLs), to evaluate the potential risk associated with chemicals found in soil or groundwater where a release of hazardous materials has occurred. ESLs are established for commercial/industrial uses and for residential purposes and construction workers. ESLs are generally used as thresholds to determine if corrective action or precautionary measures need to be taken with respect to the proposed project area.

California Health and Safety Code, Division 20, Chapter 6.95

California Health and Safety Code (HSC), Division 20, Chapter 6.95 requires that businesses handling at least 500 pounds of a solid hazardous material, 55 gallons of a hazardous liquid, or 200 cubic feet of a hazardous gas prepare Hazardous Materials Business Plans (HMBPs). These plans must include floor plans of the facility; an inventory of hazardous materials handled or stored; an emergency response plan; and a safety and emergency response training program for employees.

Above-Ground Petroleum Storage Act

California HSC, Chapter 6.67, requires owners of aboveground petroleum storage tanks to prepare Spill Prevention, Control, and Countermeasure plans and establish monitoring programs. The above-ground storage of hazardous materials is also addressed in 8 CCR.

These regulations require proper drainage, dikes, and other secondary containment and safety measures to prevent accidental discharge from endangering employees, facilities, and/or the environment. The storage of hazardous materials in above-ground storage tanks (ASTs) is also subject to National Fire Protection Association Standards, enforced locally by the San José Fire Department.

California Pipeline Safety Act

In California, hazardous liquid pipelines are regulated by the California Pipeline Safety Act. Associated regulations are contained in Government Code Sections 51010-51019.1 and are enforced by the Office of the State Fire Marshal. Hydrostatic (pressure) testing is required for all new petroleum pipelines. In addition, cathodic protection and leak detection systems are required for new pipelines. New pipelines also must be designed to accommodate the passage of inspection devices capable of examining the interior of the pipeline. Pipelines must have leak mitigation plans, emergency response plans, and equipment in place as required by the State Fire Marshal. The State Fire Marshal, at their discretion and in the interest of public safety, may approve or require test methods on a case-by-case basis other than the required hydrostatic tests.

Local

Envision San José 2040 General Plan

The policies in Table 4.9-1 from the City's General Plan have been adopted for the purpose of reducing or avoiding impacts related to hazards and hazardous materials.

Table 4.9-1: General Plan Policies – Hazards and Hazardous Materials

Policy	Description
RC-6.5	The City shall designate transportation routes to and from hazardous waste facilities as part of the permitting process in order to minimize adverse impacts on surrounding land uses and to minimize travel distances along residential and other non-industrial frontages
EC-7.1	For development and redevelopment projects, require evaluation of the proposed site's historical and present uses to determine if any potential environmental conditions exist that could adversely impact the community or environment.
EC-7.2	Identify existing soil, soil vapor, groundwater and indoor air contamination and mitigation for identified human health and environmental hazards to future users and provide as part of the environmental review process for all development and redevelopment projects. Mitigation measures for soil, soil vapor and groundwater contamination shall be designed to avoid adverse human health or environmental risk, in conformance with regional, state and federal laws, regulations, guidelines and standards.
EC-7.4	On redevelopment sites, determine the presence of hazardous building materials during the environmental review process or prior to project approval. Mitigation and remediation of hazardous building materials, such as lead-paint and asbestos-containing materials, shall be implemented in accordance with state and federal laws and regulations.
EC-7.5	On development and redevelopment sites, require all sources of imported fill to have adequate documentation that it is clean and free of contamination and/or acceptable for the proposed land use considering appropriate environmental screening levels for contaminants. Disposal of groundwater from excavations on construction sites shall comply with local, regional, and state requirements.
EC-7.8	Where an environmental review process identifies the presence of hazardous materials on a proposed development site, the City will ensure that feasible mitigation measures that will satisfactorily reduce impacts to human health and safety and to the environment are required of or incorporated into the

Table 4.9-1: General Plan Policies – Hazards and Hazardous Materials	
Policy	**Description**
	projects. This applies to hazardous materials found in the soil, groundwater, soil vapor, or in existing structures.
EC-7.9	Ensure coordination with the SCCDEH, RWQCB, DTSC or other applicable regulatory agencies, as appropriate, on projects with contaminated soil and/or groundwater or where historical or active regulatory oversight exists.
EC-7.10	Require review and approval of grading, erosion control and dust control plans prior to issuance of a grading permit by the Director of Public Works on sites with known soil contamination. Construction operations shall be conducted to limit the creation and dispersion of dust and sediment runoff.
EC-7.11	Require sampling for residual agricultural chemicals, based on the history of land use, on sites to be used for any new development or redevelopment to account for worker and community safety during construction. Mitigation to meet appropriate end use such as residential or commercial/industrial shall be provided.

Emergency Operations and Evacuation Plans

The City of San José's Emergency Operations Plan includes standard operating procedures for flood events, heat waves, off-Airport aviation accidents, power outages, terrorism, and urban/wildland interface fires. The Citywide Emergency Evacuation Plan sets forth the responsibilities of City personnel and coordination with other agencies to ensure the safety of San José citizens in the event of a fire, geologic, or other hazardous occurrence.

4.9.1.3 *Existing Conditions*

Hazardous Material Use at San José International Airport

The operation of the Airport involves the storage, use, and transport of hazardous materials and the generation of hazardous wastes. Hazardous materials are transported to and from the Airport by pipeline and ground vehicles, as well as by passenger and all-cargo aircraft. The largest quantity of hazardous material used at the Airport is aviation fuel, which is consumed in operations and, therefore, generates minimum hazardous waste. In addition to aircraft refueling, industrial operations at the Airport include commercial and private airplane maintenance and cleaning, ground vehicle and equipment maintenance and cleaning, building and grounds maintenance, and material storage and transfer areas. These operations may additionally involve the use and storage of hazardous materials and the generation of hazardous waste. Facilities on the Airport are operated by both the Airport and Airport tenants. Table 4.9-2 provides a summary of the Airport-operated facilities and tenant facilities at which hazardous materials are used/stored or generated.

Table 4.9-2: Summary of Hazardous Materials Storage and Waste Generation		
Facility Name and Address	**Hazardous Material Storage Summary**	**Hazardous Waste Generation Summary**
MPOE Generator (south main point of entry) 1203 Airport Boulevard	Diesel aboveground storage tank (AST) for emergency generator	--
Ground Support Equipment Wash Rack 1207 Airport Boulevard	Propane AST	--
American Airlines Hangar* 1253 Airport Boulevard	Oils/lubricants (5 gallon and smaller containers) along with de-icing fluid and various other miscellaneous maintenance related materials.	Used oil, oil filters, contaminated adsorbent, batteries, antifreeze and aerosols stored in drums and smaller containers.
Multi-Tenant Hangar: UPS, Alaska, JetPro* 1277 Airport Boulevard	Alaska Airlines: Oil, antifreeze and de-icing fluid stored in drums and smaller containers. JetPro: ZEP degreaser in a drum.	Alaska: Used oil, jet fuel, aerosol cans, spent batteries, spent de-icing fluid and oily debris stored in drums. Universal wastes also generated. JetPro: Used oil, oil filters and antifreeze. UPS: Used oil, waste jet fuel and damaged package wastes stored in drums
Airport Sign Shop 1311-B Airport Boulevard	Inks, alcohols, lubricants, spray paint, propane and gasoline (in small containers - typically 1 to 5 gallon capacity)	Waste printer ink
Hazardous Waste Accumulation Area 1311-C Airport Boulevard	--	Used oil, antifreeze, absorbent, aerosol cans, latex paint, waste corrosives and acids, and universal wastes (stored in drums and smaller containers)
SJPD Airport Division (Old Bldg.) 1387 Airport Boulevard	Diesel in ASTs for emergency generators	--
Fleet Maintenance & Paint Shop 1395 Airport Boulevard	Two underground storage tanks (USTs) containing gasoline and diesel. Propane, paint related products, oils, antifreeze, transmission fluid (stored in drums and ASTs)	Used oil, antifreeze and absorbent (stored in containers and drums)
Airport Facilities 1401 Airport Boulevard	Grounds and facility maintenance chemicals and propane	--
SJ Fire Station #20 1433 Airport Boulevard	Fire Fighting Agents concentrates stored in ASTs and drums. Diesel in ASTs for emergency generators.	--
Southwest Airlines Cargo* 1521 Airport Boulevard	Propane cylinders	--
Terminal B - Lot 4 1639 Airport Boulevard	Propane AST	--

Table 4.9-2: Summary of Hazardous Materials Storage and Waste Generation		
Facility Name and Address	**Hazardous Material Storage Summary**	**Hazardous Waste Generation Summary**
Consolidated Rent-A-Car facility (CONRAC)* 1659 Airport Boulevard	Three USTs contain gasoline. Diesel AST for emergency generator. Motor oil, car wash detergents and window wash fluid stored in drums and/or ASTs. AFFF is stored in an ASTs	Used oil (stored in ASTs), used oil filters (stored in drums)
Terminal B - Lot 5 1661 Airport Boulevard	Diesel AST for emergency generator	--
Terminal B 1701 Airport Boulevard	Diesel in ASTs for emergency generators	--
Alaska Airlines Ramp/Terminal Facility* 1701 Airport Boulevard	De-icing fluid (propylene glycol) stored in an AST. Gasoline and diesel (storage method not described). Lead-acid batteries for ground support equipment.	--
Southwest Airlines Ramp/Terminal Facility* 1701 Airport Boulevard	--	Used absorbent stored in drums.
Central Plant 2055 Airport Boulevard	Water treatment chemicals, oxygen and nitrogen tanks	--
Terminal A Garage 2075 Airport Boulevard	Diesel AST for fire water pumps	--
Terminal A 2077 Airport Boulevard	Diesel stored in one UST and in ASTs for emergency generators	--
American Airlines Ramp/Terminal Facility* 2077 Airport Boulevard	Lead-acid batteries in ground equipment, de-icing fluid, and miscellaneous lubricants in 1-gallon and smaller containers.	Used absorbent
United Airlines Ramp/Terminal Facility* 2077 Airport Boulevard	--	Used absorbent and universal wastes. Biohazard waste (if needed).
Delta Airlines Ramp/Terminal Facility* 2077 Airport Boulevard	De-icing fluid (propylene glycol) stored in drums and tank wagon.	Used oil, filters and absorbent stored in drums
Rocky Pond Retention Basin Pump Station 2080 Airport Boulevard	Diesel ASTs for water pumps	--
CNG Fueling Station* 2151 Airport Boulevard	Compressed Natural Gas (CNG) and diesel AST for emergency generator	--
North Air Cargo/Switchgear 2201 Airport Boulevard	Diesel AST for emergency generator	--

Table 4.9-2: Summary of Hazardous Materials Storage and Waste Generation		
Facility Name and Address	**Hazardous Material Storage Summary**	**Hazardous Waste Generation Summary**
Swissport Fuel Dispensing Racks* 2201 Airport Boulevard	Diesel and Jet A stored in ASTs.	--
Swissport Fueling Services* (Airside Maintenance Shop and Yard) 2341 Airport Boulevard	Oils/lubricants, antifreeze stored in drums and smaller containers. Jet A, diesel and gasoline in mobile tankers.	Used oil and filters stored in drums
Atlantic Aviation* 1162 Aviation Avenue	--	Used oil and waste fuel stored in drums
Hewlett Packard* 1210 Aviation Avenue	Oil, paint, safety kleen solvent, diesel and Jet A fuel (in quantities between 25 and 260 gallons). Aerosols and other miscellaneous materials also are stored.	Unknown
Atlantic Aviation* 1250 Aviation Avenue	Jet A fuel and Avgas in ASTs at tank farm. Oils, de-icing fluid and Prist® stored in drums and totes.	Used oil, absorbents, waste fuels, spent de-icing fluid, stored in drums.
General Aviation West 1128 Coleman Avenue	--	Used oil and oil filters, and oily debris (stored in drums)
AvBase* 1144 Coleman Avenue	Jet A fuel stored in an AST	Used oil, waste fuel, used filters and oily rags stored in drums
Airfield Electrical Lighting Vault 273 Martin Avenue	Diesel in ASTs for emergency generators	--
FAA Airport Traffic Control Tower* 275 Martin Avenue	Diesel in AST for emergency generator	--
Westside Parking Lot 325 Martin Avenue	Diesel in AST for emergency generator	--
Signature Flight Support Terminal Building and Hangars 1-6* Martin Av.	Jet A fuel, Avgas, MoGas, and diesel in ASTs. Also 2-(2-Methoxyethoxy) ethanol (a fuel system icing inhibitor) stored in drums.	Used oil, used antifreeze and waste fuels in drums.
Signature Flight Support Hangar 7 & Fuel Farm*, Martin Av.		
Swissport Fuel Farm* 2250 Seaboard Avenue	Jet A fuel and diesel in ASTs. AFFF also is stored in an AST. Motor oil is stored in 5-gallon containers.	Used motor oil and used filters are stored in drums

* Tenant-Operated Facility

Source: Cornerstone Earth Group, March 2019

Existing Aviation Fuel Storage and Use

Aircraft fueling at the Airport occurs primarily at commercial gates, cargo handling areas the Fixed Base Operators (FBOs) and general aviation areas. On the northeast side of the Airport where commercial and cargo aircraft operate, Jet A fuel is conveyed to covered fuel reloading racks via a dedicated pipeline from a fuel tank farm located on the northeast side of U.S. 101 (at 2250 Seaboard Avenue); these facilities are operated by Swissport Fueling, Inc. (Swissport). Mobile fuel tanker trucks then drive to individual aircraft positioned at each gate and refuel the aircraft through a flexible pipe connection. At the FBO and general aviation areas on the west side of the Airport, three main fueling operations take place. AvBase, Atlantic Aviation and Signature Flight Support store their fuel in their own ASTs, which are re-loaded via incoming tanker trucks. Mobile on-site fueling trucks then transfer fuel from the ASTs to aircraft.

A summary of fuel storage at these facilities is presented in Table 4.9-3. Annual aviation fuel consumption at the Airport for 2017 and 2018 is presented in Table 4.9-4.

Table 4.9-3: Existing Aviation Fuel Storage Capacity

Facility/Operator	Tanks	Type of Fuel	Total Capacity (gallons)
Swissport	110, 102, 103, PRT-1, PRT-2 and ST	Jet A	1,919,211
Atlantic Aviation	1, 2, 3 and 4	Jet A	80,000
	5	Avgas	15,000
AvBase	1	Jet A	20,000
Signature Flight Support	1, 2 and 3	Jet A	60,000
	4	Avgas	15,000
		Total	**2,109,211**

Source: Cornerstone Earth Group, March 2019

Table 4.9-4: Existing Aviation Fuel Consumption

Type of Fuel	2017	2018	Percent Increase
Retail Avgas	64,383	69,744	8.3 %
Retail Jet A	11,817,158	11,665,226	-1.3 %
Contract Jet A	100,547,632	110,207,934	9.6 %
Total	**112,429,173**	**121,942,904**	**8.5 %**

Source: Cornerstone Earth Group, March 2019

Re-Fueling of Commercial and Cargo Aircraft

Operations at the Swissport Fueling Services facility include bulk product storage, pipeline product receipt, tank truck product receipt, refueler load area product dispensing, and filter separator replacement. Swissport loads fueling trucks with Jet A fuel from the Fuel Reloading Racks located on the north end of the Airport and transfers this fuel to commercial aircraft located at Terminals A and B. Diesel fuel is also stored by Swissport for operation of an emergency generator and fire water pumps. Fuel storage capacity at the Swissport facility is summarized in Table 4.9-5.

Table 4.9-5: Swissport Fuel Storage Capacity

Tank ID (ASTs)	Location	Capacity (gallons)	Product	Type of Secondary Containment
Tank-101	Tank Farm	633,685	Jet-A	Imperviously lined dike area
Tank-102	Tank Farm	635,597	Jet-A	Imperviously lined dike area
Tank-103	Tank Farm	644,879	Jet-A	Imperviously lined dike area
PRT-1	Tank Farm	1,500	Jet-A	Double walled construction
PRT-2	Airside Facility	550	Jet-A	Double walled construction
ST	Tank Farm	3,000	Jet-A	Double walled construction
Diesel Generator	Tank Farm	660	Diesel	Double walled construction
Diesel Fire Water Pumps-Tank Farm	Tank Farm	500	Diesel	Double walled construction
Diesel Fire Water Pumps-Airside	Airside Facility	300	Diesel	Double walled construction

Source: Cornerstone Earth Group, March 2019

All fuel storage at Swissport includes secondary containment. The large vertical ASTs (Tanks 101, 102 and 103) are contained within an imperviously lined concrete dike area. All other tanks are secondarily contained through double walled construction. There are three oil-water separators at the Swissport facility.

The Swissport facility receives Jet A fuel from a Jet A pipeline; however, the fuel facility also can receive fuel from tanker trucks.[148] The dedicated Jet A pipeline originates at the Wickland Pipeline facility in San José and terminates at the Swissport facility.

Diesel fuel is received by tanker trucks and pumped directly into the diesel ASTs. These transfers take place at the tank farm and airside facility, where a discharge will be contained and/or drain to an oil-water separator.

Re-Fueling of Privately-Owned Aircraft

Privately owned aircraft refueling involves the transference of Jet A and Avgas from ASTs located at AvBase, Atlantic Aviation, and Signature Flight Support, as summarized in Table 4.9-6. Mobile fueling tanker trucks are utilized to transfer fuel from the ASTs to the aircraft.

Table 4.9-6: Fuel Storage for Privately Owned Aircraft

Fixed Based Operator	Total Capacity (gallons)	Product	Type of Containment
AvBase	20,000	Jet-A	Double-walled construction
Atlantic Aviation	80,000	Jet-A	Double-walled construction
	15,000	Av Gas	Double-walled construction
Signature Flight Support	60,000	Jet-A	Double-walled construction
	15,000	Av Gas	Double-walled construction
	2,230	Diesel	Double-walled construction
	1,000	MoGas	Double-walled construction

Source: Cornerstone Earth Group, March 2019

AvBase is a general aviation FBO located on the southwest side of the Airport (1140 Coleman Avenue) and stores Jet A in a single AST for aircraft refueling. Jet A is delivered to the AST by common carrier transport trucks. AvBase operates a 5,000-gallon mobile refueler tank truck that is used to transfer fuel from the AST to aircraft on the tarmac. The AST area and the adjacent loading/unloading area drain to a single inlet. The drain discharges into an underground oil-water separator with an 8,000-gallon containment capacity. The oil-water separator is connected to the sanitary sewer system.

[148] Fuel receipt from tanker trucks is an operation that rarely occurs at this facility and typically would only occur in the event of an emergency.

Atlantic Aviation is an FBO located at the Airport (1250 Aviation Avenue) and provides fueling of general aviation and corporate aircraft. The Atlantic Aviation facility occupies approximately 22 acres on the southwest side of the Airport and includes five aircraft hangars, one aboveground fuel storage facility, mobile fuel truck parking, and ramp parking for transient aircraft. Atlantic Aviation also occupies a hangar at 1162 Aviation Avenue (former TWC Aviation facility). Typical daily operations include aircraft fueling, towing, washing, and servicing aircraft and ground service equipment. Fuel is delivered to the bulk storage ASTs by common carrier transport trucks. On-site mobile fuel delivery trucks then transfer the fuel into aircraft tanks. Fifty-five-gallon drums of fuel additive, de-icing fluid, and oils are stored in a 3-hour, fire-rated, hazardous materials bunker equipped with secondary containment. An underground oil-water separator with a 20,000-gallon containment capacity is located adjacent to the fuel tank farm and receives liquid that drains from a grated drain inside the bermed truck rack area. Additional oil-water separators are present at the Hangar A wash rack, at Hangars C and E, and at the former TWC Aviation hangar.

Signature Flight Support is an FBO located at the Airport (303-393 Martin Avenue). Avgas and Jet A fuel are stored at the Signature facility in ASTs and used to fuel aircraft. The facility consists of an FBO terminal building, offices, aircraft ramp, hangars and fuel tank farm, and has six mobile refueler tank trucks. The fuel tank farm at the facility consists of six ASTs that contain Avgas and Jet A fuel used to fuel aircraft, as well as diesel fuel and motor vehicle gasoline (MoGas) used to fuel various ground support vehicles. The fuel farm also contains an oil-water separator. The Signature facility additionally has one emergency generator with an integral diesel fuel AST and two emergency fire water pumps with associated diesel fuel ASTs.

Other Hazardous Materials and Waste

Vehicle Fueling and Maintenance

In addition to aviation fuels, smaller quantities of other hazardous materials are stored and used at the Airport for various purposes. The Airport Fleet Maintenance Facility and Consolidated Rent-A-Car (CONRAC) facility, for example, have underground gasoline and diesel storage tanks and facilities for storage of associated solvents, cleaners, and motor oil. Airline and other tenant facilities store and use various hazardous materials such as solvents, degreasers, cleaners, de-icers, paints, paint thinners, diesel, welding gases, and pesticides in support of aircraft, ground vehicle, and buildings and grounds maintenance and operations (refer to Table 4.9-2). Airport records document spills of materials such as oil, diesel, hydraulic fluid, transmission fluid, etc. Hazardous materials users at the Airport are inspected annually by the City's Fire Department.

Emergency Generators and Pumps

Most emergency/standby generators at the Airport are stationary generators that have an aboveground diesel storage tank as part of the generator set, usually at the base of the generator. Except for one propane-powered generator, diesel is the fuel source for the generators, which are used for power generation in the event of a main electrical power failure. They provide emergency power for such features as parking lot lighting, airfield lighting, terminal lighting, fire sprinkler pumps, and flood control pumps. Diesel powered pumps for fire water or storm water management also are present at a few locations. Fuel for the Airport-operated generators/pumps is added when needed by the City's Public Works Department Fleet staff.

Diesel powered generators are required to have air permits under the jurisdiction of BAAQMD. The Airport (or responsible tenant) is required to prepare and update annually the HMBPs for these facilities. The Airport occasionally has portable generators on-site for construction activities, which are registered under CARB's Statewide Portable Equipment Registration Program.

Paint Shop

Material handling for paint and paint related materials (PRMs) occurs at the Airport Paint Shop (1395 Airport Boulevard). Storage lockers designed for the storage of PRMs are utilized both indoors and outdoors at the facility. Paint waste is transported to the main Hazardous Waste Accumulation Area located at 1311-C Airport Boulevard for subsequent proper disposal as needed. Wastewater generated during washing activities is collected through an existing water clarifier structure located adjacent to the Paint Shop that discharges to the sanitary sewer.

Aircraft and Vehicle Washing

Aircraft and vehicle washing generates detergents, total suspended solids, oil, grease, fuel, and metals. Commercial aircraft are washed off-Site for compliance with the Airport's Stormwater Industrial General Permit. Private/general aviation aircraft located on the Airport's southwest side are hand washed at the Airport, and washwater is collected in oil-water separators and discharged to the sanitary sewer system. This washwater does not comingle with stormwater in the stormwater drainage system. Aircraft wash racks with oil-water separators are located at the General Aviation West area, Atlantic Aviation, and the Hewlett Packard facility.

Airport Standard Operating Procedures require all ground vehicles operating within the Air Operations Area to be washed at one of two wash racks - the Fleet Maintenance Wash Rack or the Ground Support Wash Rack. The Fleet Maintenance Wash Rack is used by Airport Department vehicles. Tenant vehicles utilize the Ground Support Wash Rack. Oil-water separators are present at both wash racks that collect and separate wastewater from oils/grease and discharge to the sanitary sewer system.

The consolidated rental car facility has car wash facilities that are used by participating rental car companies. A water reclamation system and several oil-water separators are present at the rental car facility for treatment and reuse of washwater used for cleaning of rental cars.

Firefighting Foam Usage

Aqueous Film Forming Foam (AFFF) is stored at the Airport at Fire Station #20 for firefighting purposes. There have been a couple of aircraft incidents at the Airport that have required the use of fire suppression foam and some fire suppression foam has been deployed for FAA-required testing at various airside locations over the history of the Airport's operations. In 2016, AFFF was accidentally deployed from an automated fire suppression system within Hanger 7 at the Signature Flight Support facility.

Historically, AFFF contained perfluorinated compounds (PFCs), a subset of chemicals called perfluoroalkyl and polyfluoroalkyl substances (PFAS). In recent years, the USEPA has identified PFAS as emerging contaminants of concern and has identified fire training facilities and airports as potential sources of PFAS contamination. These highly soluble contaminants pose a soil leaching

concern due to their mobility, they readily migrate in groundwater, and are bioaccumulative. PFAS can be persistent in the environment with degradation periods of years, decades, or longer under natural conditions.

Aircraft De-Icing Operations

De-icing is performed on a limited basis due to the mild climate of the region. January temperatures average 50°F. In addition, FBO aircraft on the west side of the Airport and cargo aircraft in the north-east section typically do not engage in de-icing activities and typically do not dispatch aircraft under icing conditions. De-icing fluid (propylene glycol) is stored at various tenant facilities.

Hazardous Waste Generation

Airport operations generate hazardous waste; however, the vast majority of the hazardous material stored and used at the Airport is fuel that is consumed by aircraft and motor vehicles. Other common wastes include used absorbents (for spill and leak cleanup), used antifreeze, waste fuels, spent oil filters, aerosol cans and various universal wastes (batteries, fluorescent light tubes, and mercury-containing lamps, etc.). Hazardous wastes generated at the Airport are transported off-site for recycling, treatment, and/or disposal by waste disposal contractors. No hazardous waste is disposed on-site.

Tenants are responsible for the management and disposal of the hazardous waste they generate, and they have their own storage areas and arrangements with disposal companies. The exception is the general aviation west (GA West) area (1128 Coleman Avenue). Pilots/mechanics/owners of small aircraft empty their used motor oil and filters into a 55-gallon metal drum, which is stored inside a roll-top container with secondary containment and inspected monthly; it is owned, managed, and disposed by the Airport.

Hazardous waste generated by Airport operations (excluding tenant waste) is secured, collected, and managed at a main Hazardous Waste Accumulation Area located at 1311-C Airport Boulevard. The Airport has a contract with Environmental Logistics Inc. to remove and dispose of hazardous waste stored at the Hazardous Waste Accumulation Area and from the GA West area, and a contract with Safety Kleen for waste generated at the Fleet Maintenance facility located at 1395 Airport Boulevard.

The Airport generates a significant amount of universal waste (e-waste, batteries, and used light bulbs/lamps/tubes). The e-waste is picked up and recycled by Wisetek and the lights/bulbs are recycled by Quick Light. Batteries are taken to the City's Central Yard, and from there they are taken to a County collection facility, as is the case for other City Departments.

The Airport and tenants manage their hazardous materials and hazardous waste in a manner that minimizes exposure to rain, thereby reducing the potential for stormwater pollution. This is detailed further in the Airport Stormwater Pollution Prevention Plan. Hazardous waste generators are inspected by the Santa Clara County Hazardous Materials Compliance Division.

Aircraft Sanitary Service Operations

Ground support vehicles are utilized to collect, transport, and manage sanitary waste from aircraft. Lavatory waste vehicles are stationed at various ramp locations on the northeast commercial/cargo side

of the Airport. When an aircraft arrives at the gate, the lavatory vehicle mobilizes and removes the lavatory waste from the aircraft via a flexible transfer hose. When nearing capacity, the vehicle drives to the lavatory waste disposal bay at 1431 Airport Boulevard and empties the contents of the tank into the sanitary sewer. This waste, along with all sanitary waste from restrooms at the Airport, is conveyed via the existing sanitary collection system to the City Wastewater Treatment Plant for treatment.

Polychlorinated Biphenyls (PCBs)

PCBs are organic oils that were formerly used, primarily as electrical insulators, in many types of electrical equipment, including transformers and capacitors. In 1979, USEPA banned the use of PCBs and began a programmed phaseout. The most common building materials that may contain PCBs in buildings constructed or renovated from the 1950's to the 1970's are fluorescent light ballasts, caulking, and mastic used in tile/carpet as well as other adhesives and paints.

Air Transport of Hazardous Materials

Certain hazardous materials, termed "dangerous goods" by the airline industry, are transported by air, primarily by all-cargo carriers. The Airport is notified by an airline, as required by law, that a hazardous materials shipment is scheduled to occur. On those occasions, in coordination with the Air Traffic Control Tower, the aircraft is parked in a remote area, with trucks or other surface vehicles escorted directly to and from the aircraft.

The transportation of hazardous materials by air, including packaging, labeling, and reporting, is regulated under the Hazardous Materials Transportation Act. The regulation specifies restrictions on the type of hazardous materials that may be carried on aircraft and requires notification of airports where a transfer of the materials is planned. In addition to complying with federal regulations, air carriers operating at the Airport also comply with the guidelines of the International Air Transport Association (IATA). IATA has developed and issued detailed transport guidelines for association members worldwide that categorically prohibit air transport of certain hazardous materials that are considered too dangerous to be transported by air and that provide detailed instructions for transporting those materials that are allowed on aircraft. Restrictions on the type of hazardous materials that may be carried on aircraft vary somewhat between passenger and cargo flights. Prohibited goods include most explosives, any substance that could evolve heat or gas under conditions of normal transport, inhalation poisons, many flammable materials, and a long list of other chemicals. The IATA guidelines are recognized worldwide and are reviewed and updated annually. Individual air cargo carriers also have health and safety guidelines that cover handling of hazardous materials, employee health and safety, and specific in-flight storage for each make and model of aircraft.

Spills, Leaks and Response Actions

When hazardous material spills occur, the responsible tenant reports the incident to the Airport Operations Center who generates a Spill Report. Spill Report logs are maintained at the Airport per established rules and regulations. The Spill Report documents the causes of the spill, the type of material spilled, the approximate quantity spilled, any impacts to the storm sewer system, the cleanup methodology, and any subsequent corrective actions. Incidents that involve aircraft are the responsibility of the aircraft owner/operator to ensure the safe, expedient removal of the spilled material, and to repair any physical damage as a result of the incident. Under no circumstances are

spilled materials to be flushed or washed away or be allowed to enter the Airport's stormwater collection system.

A review of provided spill logs for the past 5 years indicates that incidents occur approximately 8 times per month. The most common material spilled during operations at the Airport is jet fuel. Other materials include hydraulic fluid, oil, transmission fluid, other lubricants and fuels, and lavatory waste. Most reported spills occur on paved ramp areas and are relatively small (1 to 10 gallons); they are cleaned in general accordance with established procedures (typically through the use of absorbents) by on-Site personnel. Airport Operations will contact the Airport Fire Station if the fuel spill covers over 10 feet in any direction, or it is over 50 square feet in area, continues to flow, or is otherwise a hazard to persons or property. If the spill/release of oil/fuel is 42 gallons or more; or if the spill has discharged to, or threatens to discharge to State Waters (e.g., Guadalupe River), or if the spill/release causes harm, or threatens to cause harm to the public health and safety, the environment, or property, then notifications are to be made to the California State Office of Emergency Services and the United States Coast Guard National Response Center.

The Airport utilizes "Safe Drains" to prevent spills and potentially contaminated stormwater from discharging into the Guadalupe River. These Safe Drains are located adjacent to taxiways, gate areas and other locations on the ramp (i.e., aircraft parking areas). Safe Drains contain a valve that can be manually opened and closed with a specialized key. Safe drains are kept in the closed position during dry periods so that if a spill occurs, it will not enter the storm drain system or the Guadalupe River. Additionally, a stormwater retention basin, known as Rocky Pond, is located at 2080 Airport Boulevard and utilizes two stationary diesel fueled engines to power pumps that pump water from the Retention Basin when it reaches capacity. The retention pond collects groundwater from parking garage basement pumps and runoff from landside non-industrial areas. The retention basin also can be used to contain an emergency spill from the Air Operations Area drainage by diverting the flow via manual valves.

Soil and Groundwater Contamination

The Airport has experienced several hazardous material releases that have resulted in localized impacts to soil and/or groundwater quality (refer to Table 4.9-7). Investigations and remedial actions at these locations have been conducted under oversight from the SCCDEH and/or the RWQCB. Some cases were previously overseen and closed by Valley Water; oversight responsibility for investigations and clean-up of releases from USTs was transferred from Valley Water to the SCCDEH in 2004.

As indicated in Table 4.9-7, most LUST and voluntary cleanup program (VCP) cases have been closed by the overseeing regulatory agency. The only remaining open cases are two VCP cases at Signature Flight Support (303 and 325 Martin Avenue), and a LUST case at 1615 Airport Boulevard (formerly 1661 Airport Boulevard), which was occupied by a former Chevron jet fuel AST facility until 1971 and then occupied by Dollar Rent A Car until 2002. For the open LUST case, site assessment and monitoring activities are ongoing and being conducted under RWQCB oversight. As a result of the open LUST case, the Airport is included on California's Hazardous Waste and Substances Sites List, also known as the Cortese List.

At most of the closed LUST and VCP case locations, residual contamination remains in soil and/or groundwater and, as a condition of case closure, on-going management requirements were established by the overseeing regulatory agencies.

Open VCP Cases

As indicated in Table 4.9-7, there are two open VCP cases at Signature Flight Support related to soil impacted mainly by organochlorine pesticides. These areas were historically used for agricultural purposes until 1995 and are discussed below.

Table 4.9-7: On-Site LUST and VCP Cases

Facility Name and Address	Case Type and Status	On-Going Management Requirements	Notes/Discussion
Marchese Farms 297 Martin Avenue	LUST case Closed 1996	Yes[1]	Former on-site farm complex. Impacted soil and groundwater identified in 1995 during the removal of an AST. Residual contaminants reported to remain.
Signature Flight Support Hanger A 303 Martin Avenue	VCP case Open	TBD	In a February 2019 letter, the DEH required revisions to a Soil Management Plan for planned construction activities, and further assessment of soil, groundwater and soil vapor. In addition to identified impacts from organochlorine pesticides, the DEH noted that groundwater impacted by volatile organic compounds (VOCs) originating from 282 Brokaw Road (off-Site) may have migrated below the Site.
Signature Flight Support 325 Martin Avenue	VCP case Open	Yes[2]	Soil impacted mainly by organochlorine pesticides.
SJ Airport General Aviation 1101 Airport Blvd	LUST case Closed 2009	Yes[3]	Three USTs removed in 1990 and two USTs removed in 2004. Residual contaminants reported to remain.
Atlantic Aviation 1250 Aviation Ave	LUST case Closed 2006	Yes[3]	Four USTs and an oil-water separator were removed in 2005. Residual contaminants reported to remain.
SJ Airport Fleet Maintenance Area 1395 Airport Boulevard	LUST case Closed 2012	Yes[3]	Four USTs were removed in 1990 and one UST was removed in 2006. Residual contaminants reported to remain.
SJ Airport/Chevron 1401 Airport Blvd	LUST case Closed 2015	Yes[3]	Former tank farms operated by Chevron and the City. Multiple USTs and an AST were removed between 1991 and 2011. Residual contaminants reported to remain.
Terminal C 1661 Airport Blvd	LUST case Closed 2005	Yes[3]	One UST was removed in 1992. Residual contaminants reported to remain.
Terminal A 1701 Airport Blvd	CPS case Closed 1996	Unkown[4]	Former "Burn Pit."

Table 4.9-7: On-Site LUST and VCP Cases			
Facility Name and Address	**Case Type and Status**	**On-Going Management Requirements**	**Notes/Discussion**
AMPCO Site 1801 Airport Blvd	LUST case Closed 2002	None specified	One UST was removed in 2000. Residual contaminants reported to remain.
Dollar Thrifty 2251 Airport Boulevard	VCP case Closed 2012	Yes[3]	An AST, carwash and an oil-water separator were removed in 2012. Residual contaminants reported to remain.
Avis Budget 2225 and 2253 Airport Boulevard	VCP case Closed 2012	Yes[3]	Three ASTs, two car washes and two oil-water separators were removed in 2012. Residual contaminants reported to remain.
Hertz 2411 Airport Boulevard	VCP case Closed 2011	Yes[3]	An AST, carwash, and an oil-water separator were removed in 2011. Residual contaminants reported to remain.
Rental Car Facilities Southeast of Former Terminal C			
Avis Rent A Car case# 43-0134 1445 (1521) Airport Blvd.	LUST case Closed 1996	Yes[1]	One UST was removed in 1985. Residual contaminants reported to remain.
Avis Rent A Car case# 07S1W01A07f 1521 Airport Blvd.	LUST case Closed 2004	Yes[3]	One UST, an AST and an oil-water separator were removed in 2002. Residual contaminants reported to remain.
Budget Rent A Car 1521 Airport Blvd.	LUST case Closed 2006	None specified	One UST and an oil-water separator were removed in 2002. Residual contaminants reported to remain.
National Rent A Car 1527A Airport Blvd.	LUST case Closed 2008	Yes[3]	One UST, two ASTs, an oil-water separator and two car wash sumps were removed in 2002. Residual contaminants reported to remain.
National Car Rental 1585 Airport Blvd.	LUST case Closed 1995	None specified	One UST was removed in 1992. Residual contaminants reported to remain.
Former Chevron USA Tank Area and Dollar Rent A Car 1615 Airport Boulevard (formerly 1661 Airport Boulevard)	LUST case Open	TBD	There are two separate releases at this location. One is a gasoline UST release from a former Dollar Rent a Car (Dollar) facility, and the other is a release of jet fuel from an AST(s) from a former Chevron jet fuel AST facility. The site was supplied with jet fuel by Standard Oil of California for use by United Airlines (United) until approximately 1971. Following termination of use by United, the site was used by Dollar until 2002. Dollar installed a gasoline UST in 1971, which was removed in 1990. Various other car rental businesses, including Alamo, Avis and Hertz were located adjacent to or in the immediate vicinity. The area is currently used for airport parking. Assessment and monitoring activities are ongoing and being conducted under RWQCB oversight.

Table 4.9-7: On-Site LUST and VCP Cases			
Facility Name and Address	**Case Type and Status**	**On-Going Management Requirements**	**Notes/Discussion**
Hertz Corporation 1617 Airport Blvd.	LUST case Closed 2006	Yes[3]	Two USTs were removed in 1986. In 2002, two USTs, two ASTs, an oil-water separator and hydraulic lifts were removed. Residual contaminants reported to remain.
Budget Rent A Car 1661 Airport Blvd.	LUST case Closed 1992	None specified	One UST was removed in 1989. Residual contaminants reported to remain.

Notes:

TBD = To be determined (case still open)

CPS = Cleanup Program Sites (CPS), formerly known as Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Lead agency identified as the RWQCB.

1. RWQCB notification and the preparation of a health and safety plan (HSP) required upon planned change in land use, use of groundwater, or excavations that disturb soil or groundwater.
2. Any soil disturbed must be managed in accordance with the DEH approved SMP. Case closure is pending and additional requirements could be stipulated.
3. Residual contamination remains in soil and/or groundwater at the site that could pose an unacceptable risk under certain site development activities such as site grading, excavation, or the installation of water wells. Therefore, the impact of the disturbance of any residual contamination or the installation of water well(s) in the vicinity of the residual contamination shall be assessed and appropriate action taken so that there is no significant impact to human health, safety, or the environment. This could necessitate additional sampling, health risk assessment, and mitigation measures. The County DEH and the appropriate planning and building department shall be notified prior to any changes in land use, grading activities, excavation, and installation of water wells. This notification shall include a statement that residual contamination exists on the property and list all mitigation actions, if any, necessary to ensure compliance with this site management requirement.
4. Only limited information is available on the Geotracker website. Case files were requested from the RWQCB. The RWQCB indicated that they have no additional information.

Source: Cornerstone Earth Group, March 2019

325 Martin Avenue: In 2014, prior to the initiation of construction activities for the existing Signature Flight Support facilities, soil sampling was conducted that identified elevated concentrations of organochlorine pesticides (OCPs). OCPs were detected at concentrations exceeding residential screening levels, and some concentrations also exceeded their respective Total Threshold Limit Concentrations (TTLCs).[149] The detected OCP concentrations typically did not exceed commercial screening levels.

Signature Flight Support subsequently entered into a Voluntary Cleanup Program Remedial Action Agreement with the SCCDEH. SCCDEH approved a Soil Management Plan (SMP) in April 2015 that described methods to appropriately manage the impacted soil on-site during construction activities. In general, the approved SMP allowed, under certain conditions, for the on-site reuse of soil with

[149] The TTLC is the concentration at which a solid waste is considered a hazardous waste, for waste disposal classification purposes, per Title 22 of the California Code of Regulations.

contaminant concentrations that did not exceed commercial/industrial screening levels. If such soil contained contaminant concentrations exceeding TTLCs, it was required to be placed below impervious surfaces or below 2 feet of acceptable soil. An As-Built Soil Reuse Report was prepared in 2016 and approved by SCCDEH in February 2017, and SCCDEH indicated that the case would be evaluated for closure.

The Soil Reuse Report indicates that impacted soil was reused at four on-site locations including: 1) within the 325 Martin Avenue study area along a taxiway to the northeast of the Signature Flight Support hangers; 2) near the VOR antenna on the northwestern portion of the Airport; 3) within a landscape berm along Coleman Avenue, and 4) in the Guadalupe Gardens. The Soil Reuse Report states that soil that may be disturbed during the future operations of the site (e.g., future construction, utility and other subsurface maintenance or repair work, paving, landscaping, etc.) should be properly managed in accordance with the SCCDEH approved SMP.

303 Martin Avenue: To facilitate the construction of an additional hanger to the southeast of Signature Hanger 1 (at 303 Martin Avenue), Hanger A LLC entered into a Voluntary Cleanup Program Remedial Action Agreement with the SCCDEH in November 2018. A soil characterization study was undertaken on the proposed expansion site in 2017 that identified OCP impacted soil, similar to that identified at the adjacent 325 Martin Avenue study area. A SMP dated October 31, 2018 was submitted for SCCDEH review. In a February 2019 letter, the SCCDEH required revisions to the SMP and further assessment of soil, groundwater and soil vapor. In addition to identified impacts from OCPs, the SCCDEH noted that groundwater impacted by volatile organic compounds (VOCs) originating from 282 Brokaw Road (off-site) may have migrated below the site. Efforts to address SCCDEH requirements are ongoing.

Off-Site Sources of Contamination

The Hazardous Materials Assessment identified two off-site spill incidents that appear to have impacted groundwater at the Airport.

Former FMC Corporation Facility - 1125 Coleman Avenue

The former FMC Corporation facility was in operation from 1905 to 1996 and is located adjacent to the southwest of the Airport (across Coleman Avenue). Research, development and manufacturing of military tracked vehicles were conducted at the FMC property, primarily under U.S. Department of Defense contracts from 1951 to 1996 when the facility closed. FMC also operated a landfill (1/4-acre) from 1946 to 1979. The 1125 Coleman address consisted of two areas: the Test Track area and the Central Plant that have been investigated and remediated separately under DTSC oversight. Remedial efforts are ongoing. Based on the information reviewed, VOC impacted groundwater has migrated from the FMC property onto the Airport.[150]

Stanford Applied Engineering - 282 Brokaw Road

The former Stanford Applied Engineering property is located at 282 Brokaw Road, adjacent to the southwest side of the Airport. Stanford Applied Engineering was a printed circuit board manufacturing facility that operated from the mid-1970s to 1992. During the 1990s, VOCs were identified in

[150] Note, however, that the extent of VOC migration onto Airport property has not been well established.

groundwater at the property. Monitoring and characterization activities are ongoing and being conducted under RWQCB oversight.

Health and Safety Programs and Regulatory Compliance

Effective health and safety programs are the principal means of ensuring the health and safety of airport workers, the public, and the environment. The primary health and safety plans and policies in place at the Airport include HMBPs; Spill Prevention, Control, and Countermeasure Plans, Injury and Illness Prevention Program, Storm Water Pollution Prevention Plans (SWPPPs), and an Emergency Response Plan. These plans are on file in the Airport Department, City Fire Department, and the City Office of Emergency Services.

The use and storage of hazardous materials at the Airport is regulated under a variety of federal, state and local statutes (refer to Section 4.9.1.2), with inspections undertaken by the County DEH and the City's Fire Department.

4.9.2 Discussion of Hazards and Hazardous Material Impacts

For the purpose of determining the significance of the project's hazards and hazardous materials impacts, a significant impact would occur if the project would:

1) Create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials
2) 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
3) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school
4) 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
5) 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, result in a safety hazard or excessive noise for people residing or working in the project area
6) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
7) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

4.9.2.1 *Impacts Associated with Transport, Use, or Disposal of Hazardous Materials*

Impact HAZ-1:	**The Project could create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials. Mitigation is included in the Project to avoid/minimize this potential. (Less Than Significant Impact with Mitigation)**

Impacts Due to Expanded Fuel Storage Facility

The Project includes several taxiway upgrades/extensions, new air cargo facilities on the east side of the Airport, construction of the South Concourse of Terminal B, upgrades and expansion of various support facilities (e.g., maintenance, flight kitchen, etc.), and the buildout of general aviation facilities on the west side of the Airport. The Project would expand the Airport's fuel storage facility (Project S-1), which is located on the north side of U.S. 101, from 2,000,000 gallons to 4,000,000 gallons. Expansion of the fuel storage facility would involve the construction of five new above-ground tanks. This component would represent the most substantial change in the presence of hazardous materials at the Airport, resulting in a doubling of the Airport's existing fuel storage capacity.

Expansion of the fuel storage facility could expose the public and the environment to hazardous materials in the event of inadvertent release to storm water, leaks to soil or groundwater, fire, or secondary containment failure (see also discussion in Section 4.6, *Hydrology and Water Quality*, Section 4.7, *Geology and Soils*, and Section 4.8, *Biological Resources*). The pipeline from the storage tanks to the dispensing site on the airfield would be subject to leakage from the pipeline itself, or failure of joints or valves, with the potential for contamination of soil or groundwater. A tank could fail during severe seismic-induced ground shaking, and/or spills could occur during fuel storage operations, resulting in substantial adverse effects off-site, unless contained and controlled. The above-ground tanks would be exposed to oxygen and the consequent risk of fire or explosion.

Various factors would limit this risk, however: first, most of the fuel would be jet fuel, which is essentially kerosene and is not explosive, although it is flammable; second, the tanks would be equipped with pressure relief valves to prevent vapor from building up within the tanks; third, the tanks would be equipped with a fire suppression system; and finally, access to the tanks would be limited to authorized personnel and operation would be governed by the Airport's health and safety plans and policies, primarily HMPs, SPCC plans, IIIP, and SWPPPs. Although a catastrophic event resulting in a substantial spill or fire from the expanded fuel storage facility would be highly unlikely in view of the stringent regulations that govern the facility design, installation, operation, and incident response, the relatively high volume of hazardous material that would be stored at the expanded tank farm would represent a significant impact.

The following measure is included in the Project to reduce the above-described impact to a less than significant level:

MM HAZ-1.1: The Project shall be designed, constructed, and maintained in compliance with all applicable regulatory standards and policies, including provisions for full on-site containment, leak detection systems, and cathodic protection. In addition, a 100-foot setback from the Guadalupe River will be maintained. The Airport and Airport tenants will continue to implement its program to minimize accident risks at the fuel handling and storage facilities. **(Less Than Significant Impact with Mitigation)**

Fuel Spills

Most aviation fuel spills occur during fueling operations on the airfield. Given the projected increases in large aircraft operations under the proposed Project, it is reasonable to expect that the number of

spills during refueling operations also could increase. Based on the Airport's historical record, most spills would be of a size that is readily controlled through existing response mechanisms, discussed above, and detailed in the Airport Ramp Traffic Regulations and the Airport's SWPPP. For these reasons, this impact is considered less than significant. The continuing implementation at the Airport of existing fuel handling procedures, which are preventive, and spill response procedures, which are designed to clean-up on-site and prevent off-site migration of spills, would ensure that this impact involving use of hazardous materials would not pose a hazard to people, or to animal or plant populations and, therefore, would be less than significant. **(Less Than Significant Impact)**

Impacts Due to Transport of Hazardous Materials

Airport operations involve the ground transport of fuels and other hazardous materials to (and wastes from) the Airport; and air cargo transport, including trans-shipment, of hazardous cargo. Hazardous materials transported on the ground can be further subdivided into fuels and other hazardous materials/wastes.

Fuel

In 2010, a pipeline was constructed connecting the fuel storage facility and the fuel dispensing facility (between Terminal A and north end of airfield). Previously, fuels were delivered to various Airport facilities in tanker trucks. With the completion of the pipeline, the need to transport fuels via tanker trucks was eliminated, thereby eliminating the potential risk of truck accidents. **(No Impact)**

Non-Fuel

Under the proposed Project, use of hazardous materials (non-fuel) would proportionally increase as a result of the proposed shift in Airport Master Plan horizon year from 2027 to 2037. Hazardous material would be delivered to various Airport facilities in small containers, in drums, or, as described for fuels, in tanker trucks. Hazardous wastes would be shipped to various locations throughout the country, but most local trips would go to a transfer facility located somewhere in the San Francisco Bay Area. Upon implementing the Project, hazardous materials transport would likely increase as a result of increased Airport operations. The result would be more hazardous materials trips, but the typical load would probably carry the same types and the same amounts of materials as at present.

Because suppliers and transporters are required to follow Department of Transportation regulations for packaging and handling, only a fraction of the potential accidents that could involve vehicles carrying hazardous materials would be expected to actually affect the integrity of the containers of hazardous materials on board. The regulatory requirements for hazardous materials containers are such that containers would be unlikely to release their contents in the event of an accident. Requirements for waste containers are more stringent than requirements for incoming non-waste materials containers.

Wastes would also be transported by licensed hazardous chemical waste haulers. Licensed hazardous waste drivers receive training in how to respond if a release were to occur. Caltrans also operates hazardous materials emergency response teams across the State. These measures would serve to minimize the consequences of an accident involving hazardous materials in transport. Because the consequences of accidents involving hazardous materials and waste would probably not be severe, the risk to the public posed by the transport of hazardous materials to and from the Airport would be expected to be relatively low, and therefore the impact would be less than significant.

Regulations and other rules that govern transport of hazardous materials by air are discussed in Section 4.9.1.2 and 4.9.1.3, above. In the event that an airline is transporting hazardous materials, the Airport would be notified of enplanement, deplanement, or trans-shipment of hazardous materials by all-cargo carriers. FAA regulations and IATA guidelines clearly define allowable materials for air shipment and place restrictions on other materials. Furthermore, guidelines cover container and handling requirements. These are supplemented by the health and safety guidelines of individual air cargo carriers. With these regulations and guidelines in force, an increase at the Airport in all-cargo transport of (permitted) hazardous materials due to expansion of cargo facilities, would not expose the public or workers to undue health or safety hazards, and therefore would be a less-than-significant impact. **(Less Than Significant Impact)**

Impacts from Storage and Use of Other Hazardous Materials

The hazardous material stream associated with non-fueling activities at the Airport is relatively small. The majority of hazardous materials used in these activities are typical of vehicle and equipment maintenance: diesel fuel, unleaded gas, paints, solvents, oils and other automotive fluids, ethylene glycol (deicer), and others.

With continuing enforcement of existing regulations that govern hazardous materials use and storage, the projected increase associated with increases in aviation activity would not necessarily pose significant health and safety hazards to Airport workers or the general public. Existing regulations and health and safety programs serve to control the storage and handling of hazardous materials at the Airport and the potential effects in the event of accidents. Airport tenants are inspected periodically by designated City and County authorities (see Section 4.9.1.3, above). The proposed Project is not expected to cause an increase in quantities of hazardous material that would require substantial changes to existing plans and programs, or that would compromise existing emergency response plans or emergency evacuation plans governing accidental release of hazardous materials. Therefore, this impact is considered less than significant. **(Less Than Significant Impact)**

Impacts from Increased Hazardous Waste Generation

The growth in passenger and air cargo activity under the proposed Project would result in an indirect increase in the amount of hazardous wastes generated at the Airport. These hazardous wastes, such as waste motor oil, paint thinner, solvents, crushed oil filters, contaminated absorbent anti-freeze wastes, and auto batteries, are primarily associated with the rental car operations and equipment maintenance at the Airport. They would continue to be handled and disposed of by licensed hazardous waste contractors. The methods of handling and disposing of these hazardous wastes would be the same as the methods currently used at the Airport: that is, hazardous wastes are collected in approved storage bins with secondary containment, and are transported off site for recycling, treatment such as incineration, and/or disposal by contractors. These activities are subject to regulations, enforced locally by the Santa Clara County Hazardous Materials Compliance Division and the City's Fire Department.

The Airport currently handles hazardous waste in a manner that does not pose a substantial health or safety hazard. An increase in the quantity of waste generated under the proposed Project would not alter this condition. Further, as described above, and consistent with regulatory requirements, facilities,

equipment, and procedures are currently in place to respond to an accidental release of hazardous substances. The Project would not change this existing capability and, therefore, impacts from increased generation of hazardous waste would not be significant. **(Less Than Significant Impact)**

4.9.2.2 *Impacts due to Reasonably Foreseeable Conditions Involving Release of Hazardous Substances*

Impact HAZ-2:	**The Project could create a significant risk if hazardous materials in sufficient concentrations are present in soils and those materials are, in turn, released into the environment during construction. Mitigation for this potential effect is included in the Project. (Less Than Significant Impact with Mitigation)**

Exposure of Workers to Hazardous Materials

<u>On-Site</u>

Construction activity associated with the proposed Project could potentially expose workers to hazardous materials. The Airport has experienced several on-site hazardous material releases that have resulted in localized impacts to soil and/or groundwater quality. These include the two open VCP cases discussed above, and multiple closed LUST and VCP cases that are associated mainly with prior fuel storage and rental car facilities, and associated features such as prior vehicle maintenance areas, car wash facilities and oil-water separators, etc. The only remaining open LUST case is 1615 Airport Boulevard (formerly 1661 Airport Boulevard) consisting of the former Chevron USA and Dollar Rent A Car area. Other project components involving earth-moving activities could encounter hazardous materials at sites not yet identified. Asbestos could be encountered and require disposal during structural renovation of buildings.

If contaminated soils have been identified through limited soil and/or groundwater sampling per Mitigation Measure MM HAZ 2.1, and test results are above RWQCB ESLs for construction worker safety, the City would obtain regulatory guidance from the appropriate regulatory authority such as the RWQCB, DTSC, and/or the SCCDEH. Under the guidance of the appropriate regulatory authority, the City would prepare a Site Management Plan, Removal Action Workplan, or equivalent document prior to excavation or grading that specifies the measures to be taken to protect workers and the public from exposure to hazards. In accordance with OSHA requirements, the City would prepare a Health and Safety Plan prior to commencing work on any contaminated sites.

Asbestos-containing material (ACM) is regulated both as a hazardous air pollutant under the Clean Air Act and as a potential worker safety hazard under the authority of Cal-OSHA. The renovation or demolition of buildings with ACMs would require retaining contractors who are licensed to conduct asbestos abatement work and notifying BAAQMD ten days prior to initiating construction and demolition activities.

Buildings at the Airport that predate 1978 may contain lead-based paint. If lead-based paint is still bonded to the building materials on structures constructed prior to 1978, its removal is not required prior to demolition. If lead based paint is peeling, flaking, or blistered, it should be removed prior to demolition. It is assumed that such paint would become separated from the building components

during demolition activities and must be managed and disposed of as a separate waste stream. Any debris or soil containing lead paint or coating must be disposed of at landfills that are permitted to accept such waste.

Demolition of existing structures could expose construction workers or residents in the vicinity of the project site to harmful levels of ACMs or lead. The Project is required to conform to the following Standard Conditions .to reduce impacts due to the presence of ACMs and/or lead-based paint:

- In conformance with State and local laws, a visual inspection/pre-demolition survey, and possible sampling, shall be conducted prior to the demolition of on-site buildings to determine the presence of asbestos-containing materials and/or lead-based paint.
- Prior to demolition activities, all building materials containing lead-based paint shall be removed in accordance with Cal/OSHA Lead in Construction Standard, Title 8, California Code of Regulations 1532.1, including employee training, employee air monitoring, and dust control. Any debris or soil containing lead-based paint or coatings would be disposed of at landfills that meet acceptance criteria for the waste being disposed.
- All potentially friable ACMs shall be removed in accordance with NESHAP guidelines prior to any building demolition or renovation that may disturb the materials. All demolition activities will be undertaken in accordance with Cal/OSHA standards contained in Title 8 of CCR, Section 1529, to protect workers from exposure to asbestos.
- A registered asbestos abatement contractor shall be retained to remove and dispose of ACMs identified in the asbestos survey performed for the site in accordance with the standards stated above.
- ACMs containing more than one percent asbestos are subject to BAAQMD regulations and their removal shall be completed in accordance with BAAQMD requirements.

Implementation of established procedures and legal requirements would minimize the risk of health- and safety-related impacts of known contamination, and therefore limit the potential exposure of workers to hazardous contaminants. However, because workers may be unknowingly exposed if some contamination were not identified, this impact would be significant.

<u>Off-Site</u>

As discussed above, the Hazardous Materials Assessment identified two off-site spill incidents that appear to have impacted groundwater at the Airport, including the former FMC Corporation facility (1125 Coleman Avenue) and Stanford Applied Engineering (282 Brokaw Road). If construction activities will encounter groundwater within or down-gradient of the areas, appropriate health and safety measures would be implemented (as described above for on-site sources of contaminants). With implementation of mitigation measure MM HAZ-2.1, the proposed Project would result in a less than significant impact related to the health and safety of construction workers.

The following measure is included in the Project to reduce the above-described impact to a less than significant level:

MM HAZ-2.1: **P**rior to beginning construction, the Airport shall investigate construction work areas to characterize soil and groundwater quality at potentially contaminated sites

by completing a limited soil and groundwater investigation. Samples will be collected from each of the proposed work areas that will be disturbed during project construction and to the depth of the planned excavation. Soil samples will be analyzed for any chemical of concern including, but not limited to, petroleum (as gasoline, diesel, and waste oil), Title 22 metals, Organochlorine Pesticides, and Volatile Organic Compounds to evaluate the potential presence of contamination. Groundwater samples will be collected if construction projects are anticipated to require dewatering. The results of these soil and groundwater investigations will be included in the Site Management Plan per MM HAZ-2.2.

MM HAZ-2.2: The City will require the construction contractor for each project to develop and implement a Site Management Plan (SMP) or similar document to manage the cleanup of contaminated soils. If applicable, a SMP shall be prepared prior to construction to reduce or eliminate exposure risk to human health and the environment, specifically, potential risks associated with the presence of contaminated soils. At a minimum, the SMP shall include the following: 1) results from any limited soil and groundwater sampling conducted per MM HAZ-2.1; 2) stockpile management including dust control, sampling, stormwater pollution prevention and the installation of BMPs; 3) proper disposal procedures of contaminated materials; 4) monitoring, reporting, and regulatory oversight notifications; and 5) a health and safety plan for each contractor and subcontractor working at the site that addresses the safety and health hazards of each phase of site operations with the requirements and procedures for employee protection. The health and safety plan will also outline proper soil and/or groundwater handling procedures and health and safety requirements to minimize worker and public exposure to contaminated soil and/or groundwater during construction. **(Less Than Significant Impact with Mitigation)**

4.9.2.3 *Emission of Hazardous Materials Within One-Quarter Mile of a School*

Impact HAZ-3:	**The Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. (Less Than Significant Impact)**

As described above, the operation of the Airport involves the storage, use and transport of hazardous materials and the generation of hazardous wastes. However, the Airport is not located within one-quarter mile of an existing or proposed school.

4.9.2.4 *Construction of the Project on a Site with Known Contamination*

Impact HAZ-4:	**Various sites at the Airport are on a list of hazardous materials sites compiled pursuant to Government Code §65962.5. As a result, construction of facilities could create a significant hazard to the public or the environment. Mitigation is included in the Project to avoid/minimize this impact. (Less Than Significant Impact with Mitigation)**

The Airport has experienced several hazardous material releases that have resulted in localized impacts to soil and/or groundwater quality (refer to Table 4.9-7). Investigations and remedial actions at these locations have been conducted under oversight from the County DEH and/or the RWQCB. As indicated in Table 4.9-7, most LUST and VCP cases have been closed by the overseeing regulatory agency. The only remaining open cases are two VCP cases at Signature Flight Support (303 and 325 Martin Avenue), and a LUST case at 1615 Airport Boulevard (formerly 1661 Airport Boulevard), which was occupied by a former Chevron jet fuel AST facility until 1971 and then occupied by Dollar Rent A Car until 2002. For the open LUST case, site assessment and monitoring activities are ongoing and being conducted under RWQCB oversight. As a result of the open LUST case, the Airport is included on the California Hazardous Waste and Substances Sites List, also known as the Cortese List.

As discussed above, implementation of established procedures and legal requirements would minimize the risk of health- and safety-related impacts of known contamination, and therefore limit the potential exposure of workers to hazardous contaminants. However, because workers may be unknowingly exposed if some contamination were not identified, this impact would be significant. Implementation of mitigation measure MM HAZ-2.1, would reduce this impact to a less-than-significant level.

4.9.2.5 *Project Location in Proximity to an Airport*

Impact HAZ-5:	**The Project involves an airport and so is located within an airport land use plan and would not result in a safety hazard or excessive noise for people residing or working in the project area. (Less Than Significant Impact with Mitigation)**

The Project itself consists of improvements to an existing public airport and involves amendments to the Airport Master Plan that would facilitate several taxiway upgrades/extensions, new air cargo facilities on the east side of the Airport, construction of the South Concourse of Terminal B, upgrades and expansion of various support facilities (e.g., maintenance, flight kitchen, etc.), and the buildout of general aviation facilities on the west side of the Airport. Implementation of mitigation measures **MM HAZ-2.1** and **MM HAZ-2.2** would ensure that project activities would not pose a substantial potential health or safety risk or present an undue potential risk for health- and safety-related accidents. **(Less Than Significant Impact with Mitigation)**

4.9.2.6 *Impairment or Interference with Emergency Plans*

Impact HAZ-6:	**The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. (Less Than Significant Impact)**

The Airport maintains emergency response and evacuation plans to minimize the potential for and the effects of an accident, should one occur. As discussed in Section 4.9.1.3, the Airport has several health and safety plans and policies in place. These plans are on file in the Airport Department, City Fire Department, and the City Office of Emergency Services. The Project would continue to implement the aforementioned plans. Compliance with emergency response plans would ensure the Project would not interfere with an existing emergency response plan or emergency evacuation plan. As a result, the Project would result in a less-than-significant impact. **(Less Than Significant Impact)**

4.9.2.7 *Exposure of People or Structures to Risks Associated with Wildfires*

Impact HAZ-7:	**The Project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires. (No Impact)**

According to the California Department of Forestry and Fire Hazard Projection, the Airport and the surrounding area are not subject to wildfire hazards.[151] **(No Impact)**

4.9.2.8 *Cumulative Impacts*

Impact HAZ-C:	**With implementation of the mitigation measures described above, the Project would not result in a cumulatively considerable contribution to a significant hazards and hazardous materials impact. (Less Than Significant Cumulative Impact)**

Cumulative health and safety effects could occur if Airport operations and those of other proposed development, together, were to substantially increase health and safety risks in the area. Most routine Airport-related activities involving hazardous materials would be located on-site. Any routine on-site health or safety effects of hazardous materials use would be limited to the workers using the materials and anyone in the immediate vicinity of such use. No interaction would occur between the use of hazardous materials at the Airport and similar activities located at off-Airport sites.

The Project, in conjunction with other approved and planned development in the Airport vicinity, would not cumulatively involve the use, production, or disposal of materials in a manner that poses a hazard to people, or to animal or plant populations. Cumulative development would not create a

[151] California Department of Forestry and Fire Hazard Projection. Santa Clara County Very High Fire Hazard Zones in Local Responsibility Area. October 8, 2008.

substantial potential health or safety hazard or present an undue potential risk for health-related accidents, and it would not interfere with emergency response plans or emergency evacuation plans. Therefore, the cumulative use of hazardous materials would be a less-than-significant impact. **Less Than Significant Cumulative Impact)**

4.10 HYDROLOGY AND WATER QUALITY

The following discussion is based on a Hydrological Assessment prepared by HMH Engineers, Inc. in October 2019. The report is included as Appendix I to this EIR.

4.10.1 Environmental Setting

4.10.1.1 *Introduction*

This section of the EIR addresses the impact(s) of the proposed Project with regard to the issues of drainage, flooding, water quality, and groundwater. As explained in the following paragraphs, these issues are the subject of various regulatory programs that are designed to avoid adverse impacts that include the following: 1) human injury/loss of life; 2) property damage/loss; 3) harm to fisheries as well as terrestrial wildlife; 4) degradation of plant communities; 5) economic losses; and 6) reduction in quality of life, including effects on recreational activities such as boating and swimming.

Two types of impacts related to water resources are of particular importance with respect to current operations and future development at the Airport. First, a portion of the Airport is within the 100-year floodplain and is susceptible to flooding under present conditions. Proposed development may exacerbate this problem. Second, the Airport discharges surface runoff into the Guadalupe River. Further development would increase the potential both for onsite flooding and for discharge of degraded or contaminated surface runoff into the river and thence into San Francisco Bay. The discussion in this section is based on available City and agency reports and plans, and on independent analysis performed by the consultant. Appendix I contains detailed calculations and assumptions, and water quality data collected at Airport stormwater outfalls.

4.10.1.2 *Regulatory Framework*

Federal, State, and Regional

The federal Clean Water Act and California's Porter-Cologne Water Quality Control Act are the primary laws related to water quality. Regulations set forth by the USEPA and the State Water Resources Control Board (SWRCB) have been developed to fulfill the requirements of this legislation. USEPA regulations include the National Pollutant Discharge Elimination System (NPDES) permit program, which controls sources that discharge pollutants into waters of the United States (e.g., streams, lakes, bays, etc.). These regulations are implemented at the regional level by the water quality control boards. The Airport is located within the jurisdiction of the San Francisco Bay RWQCB.

Statewide Construction General Permit

The SWRCB has implemented a NPDES Construction General Permit for the State of California. For projects disturbing one acre or more of soil, a Notice of Intent and Storm Water Pollution Prevention Plan (SWPPP) must be prepared by a qualified professional prior to commencement of construction. The Construction General Permit includes requirements for training, inspections, record keeping, and for projects of certain risk levels, monitoring. The general purpose of the requirements is to minimize

pollutant discharge and protect beneficial uses and receiving waters from the adverse effects of construction-related stormwater discharges.

Statewide Industrial General Permit

The SWRCB has implemented a NPDES Statewide General Permit for Storm Water Discharges Associated with Industrial Activities (Industrial General Permit or IGP). This permit implements the federally required stormwater regulations in California for stormwater associated with industrial activities discharging to waters of the United States. The IGP regulates discharges associated with federally defined categories of industrial activities, including airports.

Municipal Regional Permit

The RWQCB has issued a Municipal Regional Stormwater NPDES Permit (MRP) that covers the project area. Under provisions of the MRP, projects that create or replace 10,000 square feet or more of impervious surface area are required to design and construct stormwater treatment controls to treat post-construction stormwater runoff. The MRP requires regulated projects to include Low Impact Development (LID) practices, such as pollutant source control measures and stormwater treatment features aimed at maintaining and restoring the site's natural hydrologic functions. The MRP also requires that stormwater treatment measures are properly installed, operated and maintained.

In addition to water quality controls, the MRP requires all new and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation or other impacts to beneficial uses of local rivers, streams, and creeks. Projects may be deemed exempt from the permit requirements if they do not meet the size threshold, drain into tidally-influenced areas or directly into the Bay, drain into hardened channels, or are infill projects in subwatersheds or catchments areas that are greater than 65 percent impervious. Based on the Santa Clara Permittees Hydromodification Management Applicability Map for the City of San José, the Airport is exempt from the NPDES hydromodification requirements related to preparation of a Hydromodification Management Plan (HMP) because it is located in a subwatershed that is greater than 65 percent impervious.[152]

San Francisco Bay Basin Plan

The San Francisco Bay RWQCB regulates water quality in accordance with the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The Basin Plan lists the beneficial uses that the San Francisco Bay RWQCB has identified for local aquifers, streams, marshes, rivers, and the San Francisco Bay, as well as the water quality objectives and criteria that must be met to protect these uses. The RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements, including permits for nonpoint sources such as the urban runoff discharged by a City's stormwater drainage system. The Basin Plan also describes watershed management programs and water quality attainment strategies.

[152] Santa Clara Valley Urban Runoff Pollution Prevention Program. "Classification of Subwatersheds and Catchment Areas for Determining Applicability of HMP Requirements." Available at: http://www.scvurppp-w2k.com/HMP_app_maps/San_Jose_HMP_Map.pdf. Accessed on August 1, 2019

Local

City of San José Post-Construction Urban Runoff Management (Policy 6-29)

Policy 6-29 implements the stormwater treatment requirements of Provision C.3 of the above-described MRP. Policy 6-29 requires all new development and redevelopment projects to implement post-construction Best Management Practices (BMPs) and Treatment Control Measures (TCMs) to the maximum extent practicable. This policy also establishes specific design standards for post-construction TCMs for projects that create, add, or replace 10,000 ft^2 or more of impervious surfaces.

City of San José Hydromodification Management (Policy 8-14)

Policy 8-14 implements the hydromodification requirements of Provision C.3 of the above-described MRP, requiring all new and redevelopment projects that create or replace one acre or more of impervious surface to manage development-related increases in peak runoff flow, volume, and duration, where such hydromodification is likely to cause increased erosion, silt pollutant generation, or other impacts to beneficial uses of local rivers, streams, and creeks. Policy 8-14 requires projects located within watersheds that are 65 percent or more impervious to be designed to control project-related hydromodification through a HMP. As noted previously, the Airport is located in a subwatershed that is greater than 65 percent impervious and, therefore, is exempt from the NPDES hydromodification requirements.

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects within the City. The policies listed in Table 4.10-1 are specific to hydrology and water quality and are applicable to the proposed Project.

Table 4.10-1: General Plan Policies – Hydrology and Water Quality

Policy	Description
IN-3.7	Design new projects to minimize potential damage due to stormwaters and flooding to the site and other properties.
IN-3.9	Require developers to prepare drainage plans for proposed developments that define needed drainage improvements per City standards.
ER-8.1	Manage stormwater runoff in compliance with the City's Post-Construction Urban Runoff (6-29) and Hydromodification Management (8-14) Policies.
EC-5.7	Allow new urban development only when mitigation measures are incorporated into the project design to ensure that new urban runoff does not increase flood risks elsewhere.
EC-5.16	Implement the Post-Construction Urban Runoff Management requirements of the City's Municipal NPDES Permit to reduce urban runoff from project sites.

4.10.1.3 *Existing Conditions*

Surface Water Quality

The Basin Plan lists the Guadalupe River as part of the Guadalupe Watershed in the Santa Clara Basin, and identifies existing beneficial uses for this basin as:

- Groundwater Recharge
- Cold Freshwater Habitat
- Fish Migration
- Preservation of Rare and Endangered Species
- Fish Spawning
- Warm Freshwater Habitat
- Wildlife Habitat
- Water Contact Recreation
- Noncontact Water Recreation

The 2012 California Integrated Report, Section 303(d) List of Water Quality Limited Segments, lists the Guadalupe River as status 5B for diazinon and 5A for mercury and trash. Diazinon is noted as having been moved by the USEPA from the 303(d) list in 2006 because of a completed USEPA approved Total Maximum Daily Loads (TMDLs). The main source of mercury in the watershed is the New Almaden Mining District, historically the largest-producing mercury mine in North America. Other sources include atmospheric deposition from global and local sources, soil erosion from areas not known to contain mines, urban stormwater runoff, seepage from landfills, and Central Valley Project water inputs to Calero Reservoir in South San José.

A Basin Plan amendment that established New Water Quality Objectives and TMDLs and an Implementation Plan for mercury in waters of the Guadalupe River Watershed was adopted by the RWQCB in October 2008 and approved by USEPA on June 1, 2010. Under this Basin Plan, there are numerous on-going projects which aim to reduce mercury levels in the Guadalupe River. In addition to being the primary regulatory means of achieving water quality goals in the watershed, the Guadalupe River Watershed Mercury TMDL will simultaneously reduce the amount of mercury in the Bay in accordance with the San Francisco Bay Mercury TMDL's proposed requirements. The TMDL calls for stakeholders to reduce load to an average of 9.4 kg per year over 20 years by removing mercury laden wastes in the mining and urban areas and implementing other treatment practices.

Surface Water Management

The Airport occupies approximately 1,050 acres, including a portion of the adjacent Guadalupe River. Airport elevations range from approximately 56 feet above mean sea level (msl) at the southern end to 28 feet above msl at the northern end, with a roughly constant downward slope of 0.2 percent from south to north for the length of the Airport. Approximately 60% of the Airport currently is covered with impervious surfaces. Surface drainage at the Airport is collected by a series of underground storm drains and pipelines that eventually discharge to the Guadalupe River through 16 outfalls. The Airport's storm drain system also serves off-Airport drainage from the west side of Coleman and Martin Avenues in the City of Santa Clara. The storm drain system is completely isolated from the Airport's sanitary sewer system. A retention basin, known as Rocky Pond, and pump are located at

the northern end of the Airport. The pumps were originally installed to assist Airport drainage during high levels of flow in the river and are also used to dewater the Terminal A parking garage.

In Advisory Circular (AC) 150/5320-5D entitled "Airport Drainage Design", the FAA recommends a design storm of 5 years for runways and taxiways and 10 years for buildings and facilities. The City recommends a 10-year design storm for City storm drain sizing purposes. Based on the above criteria, the entire Airport site was analyzed for a 10-year design storm.

According to Santa Clara County's Flood Insurance Study and record drawings received from the Airport, during a 10-year flood event water elevations in the Guadalupe River rise above the Airport's outfalls. Under these conditions, the flapgates on the storm drain outfalls are activated and the only operating storm outlet is the retention basin pump at the north end of the Airport. The overland release path of the airport proper directs the water to the Rocky Pond retention basin. The stormwater is pumped from the retention basin into the Guadalupe River at a rate of 1.5 million gallons an hour (55.7 cubic feet per second). Rocky Pond's storage volume is approximately 200,000 cubic feet. The FAA advises that no encroachments shall occur on runways and taxiways (including pavement shoulders) during a 5-year event and that ponding may occur in areas between runways and taxiways to provide temporary storage for runoff exceeding a 5-year storm event. Consistent with FAA recommendation, stormwater runoff in excess of the Rocky Pond's storage capacity and pumping rate is temporarily stored in the unpaved areas between the runways and taxiways.

Based on the FAA and Santa Clara County guidelines, the storm drain system is determined to have sufficient capacity if ponding in unpaved areas does not encroach on the runways or taxiways during the 24-hour design storm, which in this case is the 10-year storm (having a duration of 24 hours). In the existing condition, the 24-hour design storm runoff flow rate is less than the pumping rate; therefore, it is anticipated that stormwater runoff will be fully drained from the site at the conclusion of the 24-hour design storm.

Groundwater

Based on information from the Santa Clara Valley Water District, the depth to first groundwater at the Airport is expected to be less than 10 feet below surface grade. The groundwater elevation is anticipated to vary with the passage of time due to seasonal groundwater fluctuation, surface and subsurface flows into nearby water course, ground surface runoff, and other environmental factors.

Floodplain and Flood Management

The receiving water body for the Airport is an engineered channel portion of the Guadalupe River. The Guadalupe River roughly parallels the eastern boundary of the Airport. The Guadalupe River watershed is the second-largest watershed in the Santa Clara Basin and drains approximately 170 square miles into the South San Francisco Bay. Guadalupe River originates in the mountains southeast of the Town of Los Gatos and flows northwest through urbanized areas of San José and Santa Clara before it discharges into the Alviso Slough. Prior to reaching the airport, the Guadalupe River receives drainage waters from Guadalupe Creek, Los Gatos Creek, Alamitos Creek, Ross Creek and Canoas Creek which drain tributary areas in the western portion of the City of San José. Runoff from the mountainous areas is intercepted by several reservoirs, none of which has space allocated for flood control.

The Airport is adjacent to the lower, relatively flat reach of the Guadalupe River. According to a USGS gage located in Guadalupe River next to the Airport's long-term parking lot, monthly peak flows in the river measured between 2003 and 2018 have peaked at 7,000 cubic feet per second during the rainy season and were measured as low as four cubic feet per second during the dry season that occurred in 2015, the lowest snowpack year of the 2012 to 2015 drought.

The Santa Clara Valley Water District (Valley Water) is responsible for flood control in Santa Clara County on streams and waterways that drain more than 320 acres. Valley Water coordinates flood hazard mitigation efforts for the major creeks and waterways in the City and reviews development proposals that could impact flood control efforts. Development projects adjacent to rivers, creeks or streams are required to grant easements or dedicate portions of parcels for flood protection purposes. In addition, the City may require "flood proofing" techniques, such as raising the floor elevation of new buildings in flood hazard areas above the flood level.

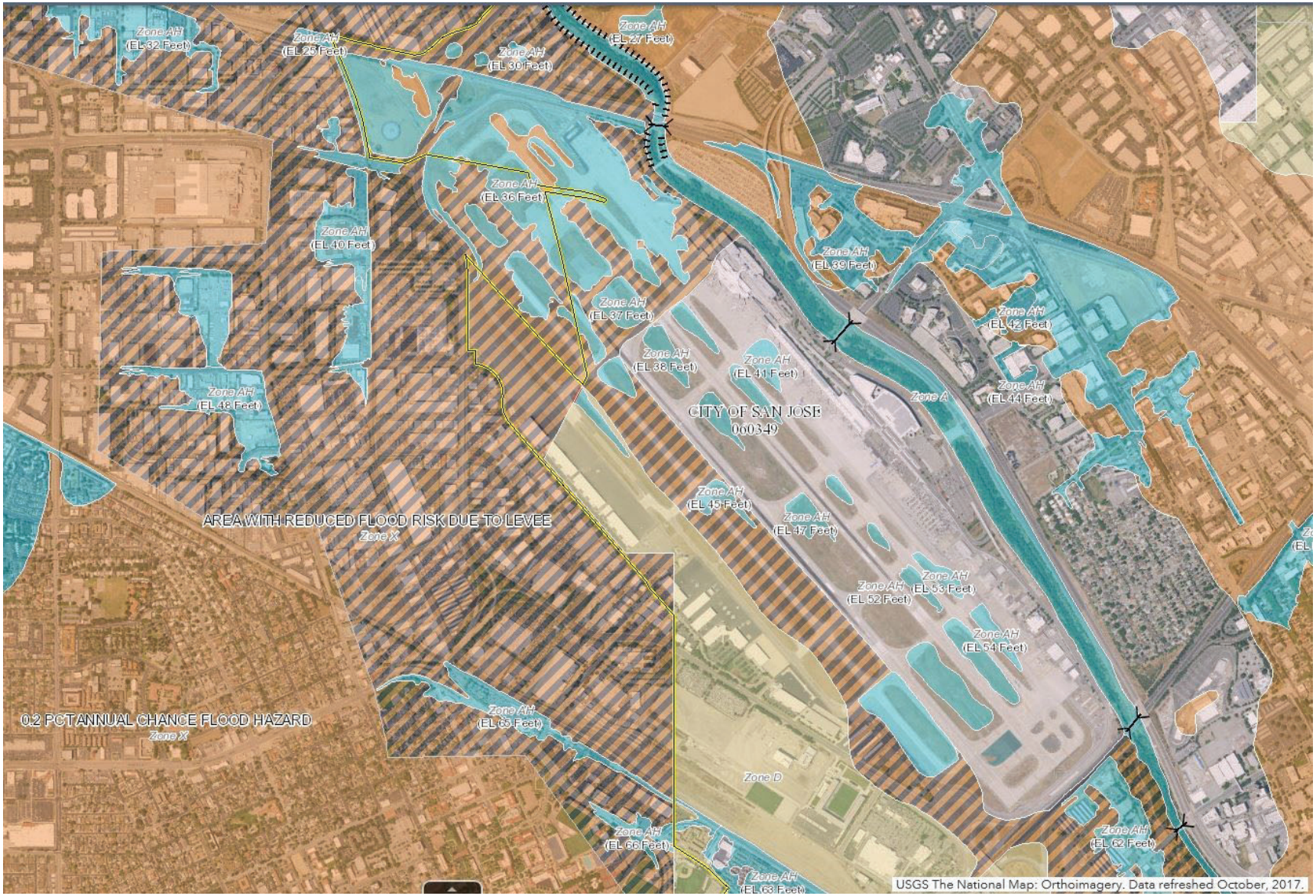
The Federal Emergency Management Agency (FEMA) oversees the delineation of flood zones and the provision of disaster assistance. FEMA publishes Flood Insurance Rate Maps (FIRMs) that show the expected frequency and severity of flooding by area. FEMA FIRM Panels 227 and 231 show the expected 100-year flooding at the Airport and have an effective date of May 18, 2009. The 100-year flood is the magnitude of a flood expected to occur on the average of once every 100 years based on historical data. The 100-year flood has a one percent chance of occurring in any given year.

A flood control project implemented by the U.S. Army Corps of Engineers between 1992 and 1998 on the Guadalupe River between I-280 and I-880, removed portions of the airport from flood Zone AO. The portions of the airport that were in Flood Zone AO prior to the project are now in Flood Zone X. Flood Zone X is defined as areas protected by levees from the 1 percent annual chance flood. The FEMA 100-year flood hazard zones for the Airport and vicinity are shown in Figure 4.10-1.

Even with the improvements mentioned above, the FIRM shows that non-critical areas of the Airport are susceptible to flooding during a 100-year storm event. The FIRM shows areas of localized ponding, designated as Flood Zone AH. Flood Zone AH is defined as areas susceptible to flooding between one to three feet with defined Base Flood Elevations (BFE). These localized ponding zones, shown in Figure 4.10.1 occur primarily in the unpaved pockets between the runways and taxiways. Zone AH also encroaches on the pavement surface in front of three of the gates at Terminal A. At this location, the pavement elevation ranges between the defined BFE and a foot above the BFE, so risk of ponding is minimal. The Federal Express cargo building located in the north end of the Airport off Ewert Road and the compressed natural gas fuel station off of Airport Boulevard on the northeast corner of the Airport are located within Flood Zone AH with a defined base flood elevation of 36 feet. All other buildings and facilities are located within Flood Zone X and are therefore outside of the 100-year floodplain. Cumulatively, Zone AH covers approximately 20% of the Airport property.

Seiche, Tsunami, and Mudflows

A seiche is an oscillation of the surface of a lake or landlocked sea varying in period from a few minutes to several hours. There are no landlocked bodies of water near the Airport that will affect the site in the event of a seiche.



FLOOD INSURANCE RATE MAP

FIGURE 4.10-1

A tsunami or tidal wave is a series of water waves caused by displacing a large volume of a body of water, such as an ocean or a large lake. Due to the immense volumes of water and energy involved, tsunamis can devastate coastal regions. The Airport is not located within a tsunami inundation hazard area.[153]

A mudflow is the rapid movement of a large mass of mud formed from loose soil and water. The Airport and surrounding area are flat, and therefore not susceptible to mudflows.

4.10.2 Discussion of Hydrological and Water Quality Impacts

For the purpose of determining the significance of the project's impacts on hydrological resources, a significant impact would occur if the project would:

1) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality
2) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede groundwater management of the basin
3) 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;
    - substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
    - create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    - impede or redirect flood flows
4) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation
5) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

4.10.2.1 *Degradation of Surface or Groundwater Quality*

Impact HYD-1:	**With the implementation of Standard Permit Conditions, the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. (Less Than Significant Impact)**

Site Discharge Water Quality

Based on existing activities at the Airport, pollutants with the highest potential to be present in stormwater runoff from the site are oils/greases, petroleum hydrocarbons, and total suspended solids.

[153] California Department of Conservation. "Santa Clara County Tsunami Inundation Quads". Available at: https://www.conservation.ca.gov/cgs/Documents/Tsunami/Maps/Tsunami_Inundation_MountainView_Quad_Santa Clara.pdf Accessed August 1 2019.

Other pollutants that may also be present to a much lesser degree include halogenated and non-halogenated solvents, acid and alkaline wastes and sanitary wastewater. These pollutants originate on aprons, runways, and parking lots, in aircraft maintenance and refueling areas and other developed areas. Exhaust from aircraft and motor vehicles contains lead and particulates that settle on paved surfaces and are entrained by runoff. Landscaped areas within and around the Airport may contribute fertilizers, herbicides, and pesticides to the runoff. In addition, runoff from properties located in the Cities of San José and Santa Clara west of the Airport contribute pollutants typical of urban areas to the Airport's stormwater system.

The Airport discharges stormwater runoff into the Guadalupe River under an NPDES MRP permit authorized by the RWQCB. The Airport is also subject to the provisions of the Construction General Permit and the Stormwater Industrial General Permit (IGP). Any new construction projects included in the Airport Master Plan that disturb a land area equal to or greater than one acre would require conformance with this permit, which requires filing of an Notice of Intent and preparation and implementation of a SWPPP to minimize potential stormwater runoff impacts from erosion, sedimentation and other pollutants. The IGP requires permittees to eliminate non-stormwater discharges and develop and implement a SWPPP to limit contact of potential pollutants with stormwater. The Airport's SWPPP details a series of BMPs for Airport and tenant facilities, such as ramp sweeping, spill prevention and response, source controls, and employee training. The Airport is responsible for amending the SWPPP periodically or whenever there is a change in construction, operation, or maintenance. The SWPPP was recently amended on November 21, 2018.

The IGP also requires that inspections are performed on a monthly basis and that the SWPPP contain provisions for monitoring stormwater discharges for selected water quality indicators. In compliance with these provisions, stormwater samples associated with the Airport's industrial activities are collected at locations on Airport property before discharging into the Guadalupe River. The seven sample locations are located in the Airport's major industrial areas and are representative of runoff from material storage, vehicle and aircraft maintenance and vehicle and aircraft fueling. The IGP requires at least four samples per year of qualifying storm events (QSEs) with two QSEs occurring in the first half of the reporting year (July 1 to December 31) and two QSEs occurring in the second half of the reporting year (January 1 to June 30). Two numeric action levels are established in the permit. If sampling results exceed the numeric action level, a Qualified Industrial Stormwater Practitioner would conduct a facility evaluation and complete the necessary response action reports.

In addition to the project's conformance with NPDES permits, it must comply with the City's Grading Ordinance, which requires the use of erosion and sediment controls to protect water quality while a site is under construction. Prior to issuance of a permit for grading activity occurring during the rainy season (October 1 to April 30), each Airport Master Plan improvement project would be required to submit an Erosion Control Plan to the Director of Public Works for review and approval. The plan must detail the BMPs that would be implemented to prevent the discharge of stormwater pollutants.

Standard Conditions

As required under City Council Policy 6-29 and the City's Grading Ordinance, the Project shall implement measures to prevent stormwater pollution and minimize potential sedimentation during construction. These measures include, but are not limited to, the following:

- Utilize on-site sediment control BMPs to retain sediment on-site;
- Utilize stabilized construction entrances and/or wash racks;
- Implement damp street sweeping;
- Provide temporary cover of disturbed surfaces to control erosion during construction;
- Provide permanent cover to stabilize disturbed surfaces after construction is complete; and
- Prior to the issuance of a permit for grading activity occurring during the rainy season (October 1 to April 30), the project shall submit to the Director of Public Works an Erosion Control Plan detailing the BMPs to prevent discharge of stormwater pollutants.

The Project, in conformance with the Construction General Permit and IGP, and with implementation of the above Standard Permit Conditions, would not result in significant construction-related water quality impacts. **(Less Than Significant Impact)**

4.10.2.2 *Groundwater Impacts*

Impact HYD-2:	**The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede groundwater management of the basin. (No Impact)**

The Airport is currently covered with impervious surfaces totaling approximately sixty percent of the site. The proposed projects under the Airport Master Plan would increase the overall imperviousness of the site by approximately four percent. However, the site does not contain any designated groundwater recharge areas, and the increase in impervious surface area over existing conditions would not substantially interfere with groundwater recharge in the basin. **(No Impact)**

4.10.2.3 *Drainage and Flooding Impacts*

Impact HYD-3:	**The Project would not 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; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or impede or redirect flood flows. (Less Than Significant Impact)**

On- and Off-Site Flooding

According to Santa Clara County's Flood Insurance Study and record drawings received from the Airport, during a 10-year flood event, water elevations in the Guadalupe River rise above the Airport's outfalls. Under these conditions, the flapgates on the storm drain outfalls are activated and the only operating storm outlet is the Rocky Basin pump at the north end of the Airport. The overland release path of the Airport property directs the water to the basin. The stormwater is then pumped from the basin into the Guadalupe River.

As previously discussed, the projects proposed under the master plan would result in an increase in impervious surface area of approximately four percent. This would result in a cumulative net increase in stormwater runoff over the existing condition. The Project would generate a volume of runoff that would exceed the storage capacity of the Rocky Pond during a 10-year 24-hour design storm, and result in stormwater temporarily ponding in the unpaved areas between the taxiways Y and Z. The ponding would not encroach upon the runways or taxiways, in conformance with FAA and Santa Clara County Guidelines. The Project would therefore conform to the FAA requirement that runways and taxiways not be impacted by the 5-year storm, which is smaller and generates less runoff than a 10-year storm. Based on the storage volumes of the ponding areas and the pumping rate at the Rocky Pond, the project site would be expected to be fully drained one and one half hours following the storm. The Project would therefore have adequate capacity to accommodate the increase in stormwater runoff generated by the Project and would not result in an exceedance of the storm drainage capacity of the Guadalupe River. **(Less Than Significant Impact)**

Approximately 20% of the Airport site is within Flood Zone AH. Flood Zone AH primarily affects the airfield, and the limits of the localized ponding are contained within existing unpaved pockets between the runways and taxiways. It is anticipated that the boundaries of the Flood Zone AH areas will be affected as the taxiways and runways are realigned, widened, narrowed, removed and extended with the Project. Based on FAA guidance, in storm events greater than the design storm, the center 50% of runways and the center 50% of taxiways serving these runways should be free from ponding. Based on Flood Zone AH areas shown on the FEMA FIRM map and the ultimate configuration of the runways and taxiways, this 50% guidance will be met in a 100-year flood event. All of the Master Plan's proposed buildings and facilities are designated to be within Zone X, which is defined as outside of the 100-year flood zone. **(Less Than Significant Impact)**

Surface Water Quality

In combination with increased aviation activity at the Airport, increased impervious surfaces would collect and release additional contaminants into stormwater runoff over the existing condition. Under Project conditions, increased stormwater runoff would result in an increase in the total amount of pollutants carried off-site. Greater vehicle traffic and aircraft operations would produce pollutants such as oil and grease, rubber, and heavy metals, which are generally deposited on paved surfaces. Any attempt to extrapolate increases in specific pollutant concentrations would be speculative, however, by increasing stormwater runoff volumes, the proposed development could be expected to increase the pollutant loads of stormwater runoff. Therefore, in the absence of control measures, the Project would substantially degrade the quality of stormwater runoff discharged to the Guadalupe River.

Provision C.3 of the MRP requires that all projects that create or replace 10,000 ft^2 or more of impervious surface area must install post-construction stormwater treatment controls. Post-construction stormwater treatment controls are permanent features included in a project to reduce stormwater pollutants and flow rates after construction of the project is completed. The approximately 114 acres of new and replaced impervious surface area proposed in the Airport Master Plan would be subject to the stormwater treatment control requirements of Provision C.3. While Provision C.3 calls for the use of LID-based treatment controls, the FAA strongly recommends that stormwater management systems located within 5,000 feet of airport operations area be designed and operated so as not to create above-ground standing water. Standing water and vegetation attract wildlife, such as birds, that can pose a hazard to planes.

The FAA also states that all vegetation in or around detention basins that provide food or cover for hazardous wildlife should be eliminated.[154] Due to the safety concern and the current FAA advisory, bioretention, flow through planters, green roofs and detention basins are not recommended as treatment methods. The Project proposes the use of non-LID treatment controls consisting of underground storage chambers and media filter devices, which would provide treatment of the runoff and would meter the flow of treated runoff at a rate that would not exceed pre-project discharge rates to the Guadalupe River. The existing Rocky Pond detention basin, installed in 1988 prior to the issuance of the FAA advisory circular, does conform to the FAA recommendation that existing detention basins have a maximum drain down time of 48 hours after a design storm and remain dry between rain events. There are existing biotreatment cells located adjacent to developments along the west side of the Airport that will be removed with the Project. In addition, the Project will remove existing surface parking and replace it with parking structures, which will result in a net reduction in impervious surface area and a corresponding reduction in polluted runoff.

The Project would include the installation of on- and/or off-Airport non-LID stormwater treatment controls, in conformance with FAA recommendations, that would reduce the pollutant loads and volumes of post-construction runoff. The Project would therefore not 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 Impact)**

4.10.2.4 *Release of Pollutants Due to Inundation*

Impact HYD-4:	**The Project would not risk release of pollutants due to Project inundation in flood hazard, tsunami, or seiche zones. (Less Than Significant Impact Impact)**

As previously discussed and shown on Figure 4.10.1, portions of the Airport are located within the 100-year flood zone. However, these flood-prone areas do not include places where potential stormwater pollutants are concentrated (chemical storage areas, refueling areas, repair and maintenance facilities, etc.), but are typically depressed areas located between the runways and taxiways that would not release substantial amounts of pollutants during periods of inundation. In addition, the SWPPP prepared for the Project includes spill prevention, pollutant source control and good housekeeping BMPs for the Airport and tenant facilities that would minimize the risk of release of pollutants. The Airport is not located within a tsunami or seiche hazard zone. **(Less Than Significant Impact)**

4.10.2.5 *Conflicts with Water Quality and Groundwater Management Plans*

Impact HYD-5:	**The Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. (No Impact)**

All improvements under the Airport Master Plan would be required to comply with the City's Post-Construction Urban Runoff Management Policy (6-29), the City's Grading Ordinance, and the NPDES

[154] *FAA Advisory Circular 150/5200 33B – Hazardous Wildlife Attractants on or Near Airports.* August 28, 2007.

Construction and Industrial General Permits and MRP to treat stormwater runoff from the proposed development sites. Therefore, the Project would not conflict with or obstruct implementation of a water quality control plan. **(No Impact)**

As described under Impact HYD-2, the Airport is not located within a groundwater recharge zone; therefore, the Project would not conflict with implementation of a groundwater management plan. **(No Impact)**

4.10.2.6 *Cumulative Impacts*

Impact HYD-C:	**The Project would not result in a cumulatively considerable contribution to a significant hydrology and water quality impact. (Less Than Significant Cumulative Impact)**

Cumulative development, as anticipated in the *Envision San José 2040 General Plan*, would increase impervious surfaces. As with the proposed Project, the cumulative development would be required to comply with the City's Post-Construction Urban Runoff Management Policy (6-29) and Grading Ordinance, and the NPDES Construction General Permit, Industrial General Permit and MRP, as applicable. Conformance with these policies, laws, and regulations would require future cumulative development to implement stormwater pollution BMPs during construction and incorporate LID project design measures to reduce water quality impacts. For these reasons, the cumulative projects, including the proposed Project, would not result in significant cumulative hydrology and water quality impacts. **(Less Than Significant Cumulative Impact)**

4.11 LAND USE AND PLANNING

4.11.1 Environmental Setting

4.11.1.1 *Regulatory Framework*

Federal

Federal Aviation Administration

As previously discussed in Section 4.9, *Hazards and Hazardous Materials*, FAA Regulations set standards for obstructions to airspace. The City of San José is required to comply with these and other FAA regulations and policies intended to protect the airport and aircraft in flight from incompatible land uses that potentially create hazards or constraints to airport operations. The FAA requires projects of a specific height in a given location within the Notification Surface area to submit a notice for airspace safety review.

The FAA Runway Object Free Area (OFA) is a rectangular safety area located at the physical end of each runway to ensure that stationary objects are not placed within proximity to the runway. No stationary objects are allowed within an OFA except those required for aviation (e.g., navigation aids, runway lighting, etc.). ~~The FAA encourages extension "of the OFA beyond the standard length to the maximum extent feasible." The FAA has also taken the position that property acquired with federal grant funds for airport purposes, and which is located in the vicinity of an extended runway centerline, is and should be treated as an "extended OFA." This means that such property would be subject to OFA restrictions on future development.~~

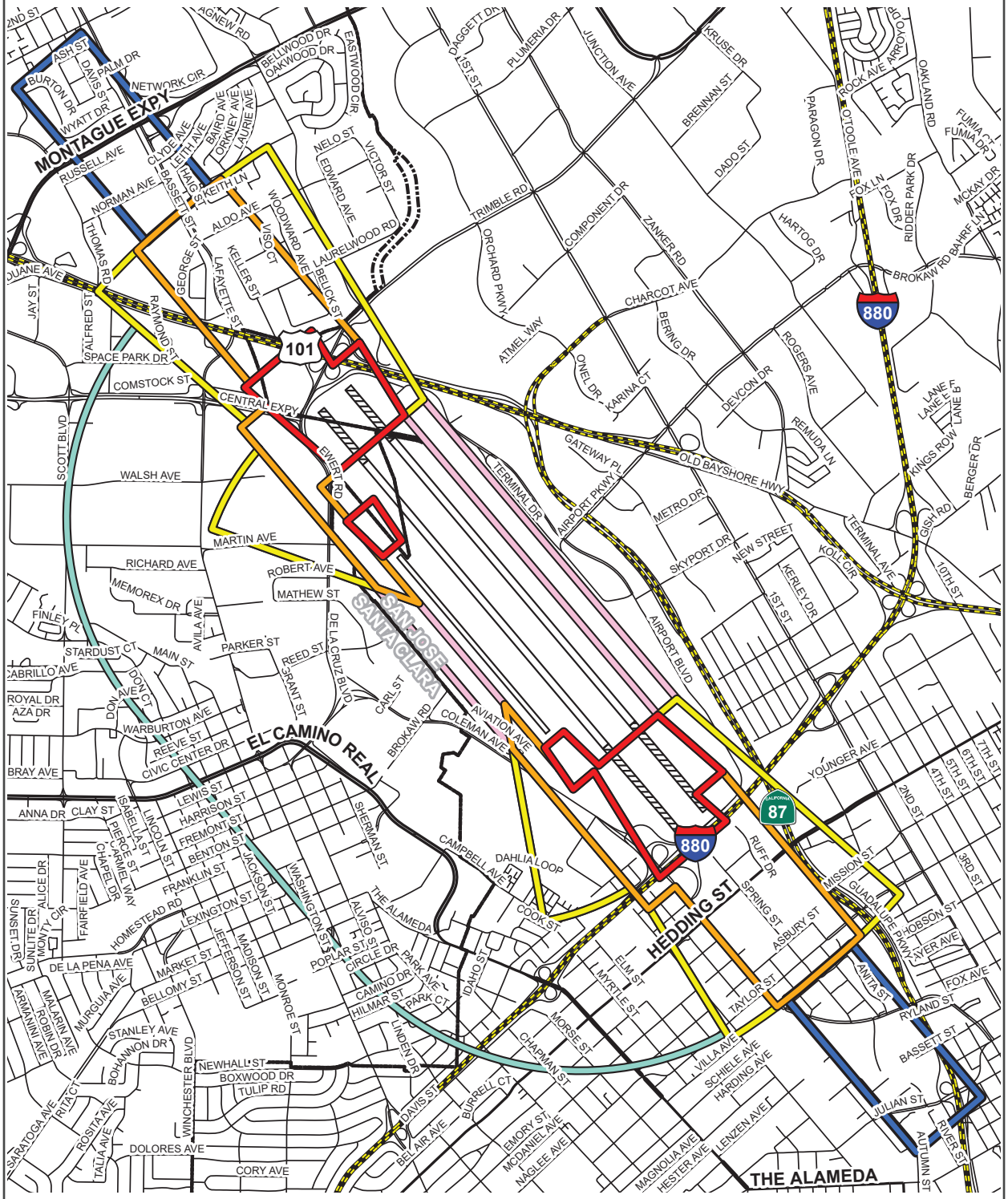
The FAA Runway Protection Zone (RPZ) is a trapezoidal-shaped area at ground level whose function to protect people and property is achieved by preventing the placement of obstacles or hazards in the path of aircraft.[155] Land uses that create glare, have lights that interfere with aviation, or create smoke are not allowed within a RPZ. Other prohibited uses include residences, churches, schools, offices, fuel storage/handling facilities, shopping centers, and stadiums, as well as any other land uses where public assembly occurs. Agricultural operations and golf courses are allowed within a RPZ, provided that they do not attract birds. Automobile parking within the RPZ is not allowed~~, as long as vehicle height is below the approach surface~~. The existing RPZs are almost entirely on Airport property (see Figure 4.11-1).

Local

Santa Clara County Airport Land Use Commission

The Santa Clara County Airport Land Use Commission (ALUC) has established safety zones around each of the airports in the County, including Mineta San José International Airport, for the purpose of minimizing the number of people exposed to aircraft crash hazards. Similar to the FAA's OFA described above, the ALUC safety zones are located at the ends of the runways and are rectangular. However, the ALUC zones are generally much larger than the OFA. The jurisdiction of the ALUC is

[155]The size of an RPZ depends on the category of aircraft which utilize the runway. FAA guidelines recommend that the airport operator control as much as the RPZ as possible to ensure protection against placement of objects or uses that are incompatible with safe aircraft approach.



AIRPORT SAFETY ZONES

FIGURE 4.11-1

limited to a review of new land uses that might fall within an ALUC zone. Some existing land uses within a given ALUC safety zone otherwise might not have been constructed had the safety zones been in place at the time the development was approved.

The ALUC breaks its safety zones down into the "inner safety area" and the "outer safety area". The inner safety area consists of the first 1,500 feet extending from the ends of each runway. The inner safety area "should preferably remain undeveloped," but automobile parking is allowed. The outer safety area is the portion of the safety zone that extends beyond the inner safety area. Development within the outer safety area is restricted to non-residential uses with low population densities (e.g., agriculture, parks, one-story warehousing, automobile parking, etc.). In addition, land uses in the outer safety area are limited to those that meet population density restrictions of no more than 10 persons on an annual average and no more than 25 persons at any one time on each net acre.

All of the Airport Safety Zones are shown on Figure 4.11-1. Safety at the southern ends of the main runways is enhanced by the use of a displaced landing threshold, meaning that the portion of the runway south of Taxiway C is unused during landings. Additional safety protection is afforded by the fact that lands south of the ALUC safety zones and directly under the flight path are, for the most part, owned by the City and have been cleared of many structures.

The Comprehensive Land Use Plan (CLUP) for Mineta San José International Airport, adopted by the ALUC on May 25, 2011 and amended on November 16, 2016, is intended to safeguard the general welfare of the inhabitants within the vicinity of the Airport and the aircraft occupants. The CLUP is also intended to ensure that surrounding new land uses do not affect the Airport's continued operation. Specifically, the CLUP seeks to protect the public from the adverse effects of aircraft noise, to ensure that people and facilities are not concentrated in areas susceptible to aircraft accidents, and to ensure that no structures or activities adversely affect navigable airspace. The implementation of the CLUP is intended to prevent future incompatible development from encroaching on the Airport and allow for its development in accordance with the current airport master plan. The aviation activity forecast for the Airport was updated to reflect the existing aviation activity and provide at least a 20-year forecast of activity. The updated aviation activity forecast formed the basis for preparation of the 2027 aircraft noise contours. The Airport Master Plan and updated aviation activity forecast and available aircraft noise contours formed the basis for preparation of the CLUP.

Envision San José 2040 General Plan

The *Envision San José 2040 General Plan* includes policies for the purpose of avoiding or mitigation impacts resulting from planned development projects in the City. The proposed Project would be subject to the airport land use policies of the General Plan, including those listed in Table 4.11-1.

City of San José Municipal Code

Title 25 of the San José Municipal Code contains provisions regulating Airport development, activities and operations that could have potential environmental impacts. Chapter 25.02 provides the purpose and components of the Airport Master Plan, Chapter 25.03 contains the Airport curfew regulations, and Chapter 25.04 contains the regulations for the various components of the implementation program for Airport development, including project development limitations and conditions.

Table 4.11-1: General Plan Policies – Land Use	
Policy	**Description**
Envision San José 2040 General Plan	
TR-13.2	Implement capital improvements to Mineta San José International Airport as identified in its Airport Master Plan.
TR-13.3	Develop and encourage improved ground access connections between the Mineta International Airport and area freeways and public transit and rail systems.
TR-14.1	Foster compatible land uses within the identified Airport Influence Area overlays for Mineta San José International and Reid-Hillview airports.
TR-14.2	Regulate development in the vicinity of airports in accordance with Federal Aviation Administration regulations to maintain the airspace required for the safe operation of these facilities and avoid potential hazards to navigation.
TR-14.3	For development in the Airport Influence Area overlays, ensure that land uses and development are consistent with the height, safety and noise policies identified in the Santa Clara County Airport Land Use Commission (ALUC) comprehensive land use plans for Mineta San José International and Reid- Hillview airports, or find, by a two-thirds vote of the governing body, that the proposed action is consistent with the purposes of Article 3.5 of Chapter 4 of the State Aeronautics Act, Public Utilities Code Section 21670 et seq.
TR-14.4	Require avigation and "no build" easement dedications, setting forth maximum elevation limits as well as for acceptance of noise or other aircraft related effects, as needed, as a condition of approval of development in the vicinity of airports.
City of Santa Clara 2010-2035 General Plan	
5.10.5-P29	Continue to refer proposed projects located within the Airport Influence Area to the Airport Land Use Commission.
5.10.5-P30	Review the location and design of development within Airport Land Use Commission jurisdiction for compatibility with the Airport Land Use Compatibility Plan.
5.10.5-P31	Discourage schools, hospitals, sensitive uses and critical infrastructure, such as power plants, electric substations and communications facilities, from locating within specified safety zones for the Airport as designated in the Airport Comprehensive Land Use Plan.
5.10.5-P32	Encourage all new projects within the Airport Influence Area to dedicate an avigation easement.
5.10.5-P33	Limit the height of structures in accordance with the Federal Aviation Administration Federal Aviation Regulations, FAR Part 77 criteria.
5.10.6-P7	Implement measures to reduce interior noise levels and restrict outdoor activities in areas subject to aircraft noise in order to make Office/Research and Development uses compatible with the Norman Y. Mineta International Airport land use restrictions.
5.10.6-P8	Continue to encourage safe and compatible land uses within the Norman Y. Mineta International Airport Noise Restriction Area.

City of Santa Clara 2010-2035 General Plan

The City of Santa Clara *2010-2035 General Plan* contains Noise and Safety policies related to the regulation of land uses in the vicinity of the Airport. These are also listed in Table 4.11-1.

4.11.1.2 *Existing Conditions*

Existing Airport Land Uses

Most of the approximately 1,000 acres of the airport are occupied by airfield uses (i.e., Runways 11/29, 12L/30R and 12R/30L; taxiways; and clear areas). Air passenger and cargo activity occur primarily on the east side of the airport where Terminals A and ~~C~~B are located. General aviation activity occurs

primarily on the west side of the airport, where the FBOs are located. The San José Fire Department's Station 20 is located on the southeast side of the Airport. The Airport property also includes a fuel tank farm located across U.S. 101 from the northeast corner of the Airport, and a parcel containing the VOR facility, located across De La Cruz Boulevard from the northwest corner of the Airport.

Surrounding Land Uses

Land uses north of the Airport consist primarily of industrial uses, with some amounts of commercial, residential, and public uses. To the south of the Airport, land uses are a mixture of residential and commercial uses, with some public uses and vacant land.

Land uses immediately adjacent to the Airport include industrial, commercial, residential, public open space and vacant land. These land uses are generally consistent with the City's General Plan Land Use designations. The Guadalupe River runs along the easterly boundary of the Airport and provides public open space and a floodway. Immediately east of and parallel to the river is SR 87. Together, the river and SR 87 provide physical barriers that separate the Airport from a commercial area to the east, which is comprised of office building complexes, hotels, as well as the Rosemary Gardens residential neighborhood.

The I-880 freeway borders the Airport on the south, separating it from the Coleman Loop area. The Coleman Loop, south of the Airport, is within the Airport Approach Zone, which is described in more detail below. Industrial, warehouse, office, retail commercial, institutional and residential uses are located to the south and west, separated from the Airport by buildings that house general aviation and other aviation-related activities. Land uses on the north side of the Airport, across U.S. 101, include industrial, commercial, institutional and residential. Land uses in the general vicinity of the Airport that are considered noise sensitive include schools, parks, libraries, and residential uses. These specific land uses and their compatibility with airport operations are identified and discussed in detail in Section 4.13, *Noise*.

Airport Approach Zone

The Airport Approach Zone is a 230-acre area immediately south of the Airport and bounded by I-880, the Guadalupe River, and Coleman Avenue. This area (also known as the "Coleman Loop" and "Guadalupe Gardens") is partially owned by the Airport and is under the primary approach path for aircraft arrivals. It was once a largely residential neighborhood entirely within the 75, 70, or 65 db CNEL noise impact area of the airport. In the late 1960s, the City of San José began acquiring residential and certain other incompatible land uses in the Coleman Loop area. An Airport Approach Zone Land Acquisition Program was formally authorized by the San José City Council in 1974. The program consisted of the purchase of approximately 625 parcels totaling 120 acres in the Coleman Loop area and relocation of residents and clearance of the acquired property. The purpose of the program, according to the 1974 EIR/EIS prepared for the project, was to comply with State and federal guidelines by ensuring a clear and safe approach area to the south of the Airport and land uses (specifically agriculture or open space) that would remain compatible with noise from aircraft operations. Funding to implement the program was provided primarily from the FAA in the form of grants for partial reimbursement of eligible program costs. The Airport Approach Zone Land Acquisition Program was completed in the early 1990s at a total cost of approximately $80 million.

In 1987, in keeping with the objectives of the program, the City Council changed the General Plan land use designation for the land acquisition program area to Public Park/Open Space. In compliance with the federal grants used to fund the acquisition program, any reuse of the property would require approval from the FAA. Other land uses in the Coleman Loop include a long-established public park (Columbus Park) and a variety of industrial, commercial, and institutional land uses that have historically been considered compatible with the Airport.

In 1988, the City commenced preparation of an interim land use plan and long-term site utilization report for the Coleman Loop area. The objective of this study effort was to improve the aesthetic appearance of the vacant land and provide productive open space uses. In 1990, the City completed the interim land use and long-term site utilization report. The report recommended a combination of public gardens, commercial garden plot leaseholds, and public open spaces that would be compatible with the FAA restrictions, the City *General Plan*, and the adjacent Guadalupe River Park.

The City initiated preparation of a Guadalupe Gardens Master Plan in 1992 to formulate a more specific development and implementation plan for the uses recommended in the earlier interim land use and site utilization report. The Guadalupe Gardens Master Plan, approved by the City and FAA in 2002, serves as an open space reuse plan to provide Airport-compatible aesthetic and low-density use of approximately 120 acres of cleared Airport Approach Zone land.

Much of the southern portion of the Guadalupe Gardens has been developed with gardens, landscaped turf, and pathways. Much of the northern-most portion, closest to the airfield, is set aside for more restricted open space such as agricultural leaseholds and protected burrowing owl habitat. The central portion of the Guadalupe Gardens remains largely vacant. Improvements completed to date include the following: 1) Courtyard Garden, 2) Historic Orchard, 3) Heritage Rose Garden; 4) Two Meandering Pathways south of Taylor Street (along former Seymour Street and Vendome Street); 5) Native Turf & Meadow Landscaping south of Taylor Street; 6) Parking Lot on former Seymour Street; 7) Garden Center (offices and visitor center on former private property); 8) City Parks Recreation and Neighborhood Services Department Corporation Yard; 9) Utility Undergrounding; 10) Taylor Street Median with crosswalk refuge; 11) Community Garden (Phase 1 and 2); 12) Our City Forest Nursery (agricultural leasehold); 13) Rotary PlayGarden with Parking Lot and entry at realigned Coleman Avenue/Autumn Street; and 14) recycled water irrigation for above open space re-uses.

4.11.2 Discussion of Land Use Impacts

For the purpose of determining the significance of the project's land use impacts, a significant impact would occur if the project would:

1) Physically divide an established community
2) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

4.11.2.1 *Division of an Established Community*

Impact LU-1:	**The Project would not physically divide an established community. (No Impact)**

The proposed Project is limited to the approximately 1,000 acres comprising the Airport. The Airport is essentially bounded by U.S 101 on the north, I-880 on the south, De La Cruz Boulevard/Martin Avenue/Coleman Avenue on the west, and the Guadalupe River/SR 87 to the east. Because the Project proposes no physical expansion beyond these boundaries, nor any expansion into the surrounding community, it would not physically divide any established communities. **(No Impact)**

4.11.2.2 *Impacts from Conflicts with Land Use Plans, Policies, and Regulations*

Impact LU-2:	**The Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. (Less Than Significant Impact)**

Envision San José 2040 General Plan

The City's *Envision San José 2040 General Plan* sets forth the goals and policies that address the future growth and development of the community. It includes the following adopted aviation goals and policies that pertain to the development of the Airport:

- Policy IE-4.5: Continue implementation of improvements to Mineta San José International airport facilities pursuant to the Airport Master Plan to maintain and expand regional, trans-continental, and international Airport operations.

- Policy TR-2.2: Provide safe bicycle and pedestrian connections to all facilities regularly accessed by the public, including the Mineta San José International Airport.

- Policy TR-13.2: Implement capital improvements to Mineta San José International Airport as identified in its Airport Master Plan.

The Project would be consistent with these *Envision San José 2040 General Plan* policies and is not anticipated to require any General Plan Amendments for implementation. In addition, the City of San José will continue to work cooperatively with the City of Santa Clara to ensure that it's General Plan goals and policies related to land use and development in the vicinity of the airport can be implemented. **(No Impact)**

City of San José Municipal Code

Section 25.04.300 of the San José Municipal Code states that construction and development of all facilities at the Airport shall be limited by and developed in accordance with the levels of development and facility plans set forth in the 1997 Airport Master Plan. One of the limitations on the development of passenger air carrier facilities is that the total number of air carrier gates should not exceed 40. The Project's proposed expansion to a total of 42 gates, which is described and analyzed in this EIR, would exceed this limitation. Therefore, in conjunction with the adoption of the proposed Major Amendment to the Airport Master Plan, and the certification of this EIR that evaluates the environmental impacts of the Project, the San José City Council would amend Section 25.04.300 of the San José Municipal Code to allow more than 40 gates (up to 42). **(Less Than Significant Impact)**

FAA Regulations

The Project will conform to FAA regulations and policies intended to protect the Airport and aircraft operations from incompatible land uses that potentially create hazards or constraints to Airport operations. These include the implementation and maintenance of Runway Object Free Areas and Runway Protection Zones. The Project will also conform to the safety zone provisions of the ALUC's Comprehensive Land Use Plan for the Airport and would be compatible with the existing and planned uses within the Airport Approach Zone and as specified in the Guadalupe Gardens Master Plan. New construction at the Airport will be subject to standard FAA review procedures. **(No Impact)**

4.11.2.3 *Cumulative Land Use Impacts*

Impact C-LU-1:	**The Project would not result in a cumulatively considerable contribution to a significant cumulative land use impact. (No Cumulative Impact)**

As discussed above, the proposed increase in aircraft activity and associated improvements to the Airport would not significantly affect land uses surrounding or in the vicinity of the Airport. The proposed new construction and operational activities would be limited to the existing Airport property. Amending the Municipal Code to allow two additional gates would not be considered a significant contribution to any cumulative land use impact as the effects are unique to the Airport and would not have the potential to combine with activities at other regional airports or typical development projects in the vicinity of the airport., The proposed Project therefore, would not contribute to a significant cumulative land use impact. **(No Cumulative Impact)**

4.12 MINERAL RESOURCES

4.12.1 Environmental Setting

4.12.1.1 *Regulatory Framework*

Surface Mining and Reclamation Act

The Surface Mining and Reclamation Act (SMARA) was enacted by the California Legislature in 1975 to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining to public health, property, and the environment. As mandated under SMARA, the State Geologist has designated mineral land classifications in order to help identify and protect mineral resources in areas within the state subject to urban expansion or other irreversible land uses which would preclude mineral extraction. SMARA also allowed the State Mining and Geology Board, after receiving classification information from the State Geologist, to designate lands containing mineral deposits of regional or statewide significance.

Pursuant to the mandate of the SMARA, the California State Mining and Geology Board (SMGB) has designated the Communications Hill Area (Sector EE), bounded generally by the Southern Pacific Railroad, Curtner Avenue, SR 87, and Hillsdale Avenue as containing mineral deposits that are of regional significance as a source of construction aggregate materials. Neither the State Geologist nor the SMGB have classified any other areas in San José as containing mineral deposits of statewide significance or requiring further evaluation.

4.12.1.2 *Existing Conditions*

The Airport is located in Mineral Resource Zone One, which is defined as areas where adequate information indicates no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.[156] There are no known mineral resources located on or adjacent to the Airport.

Other than the Communications Hills area, which is more than four miles south of the Airport, San José does not have mineral deposits subject to SMARA.

4.12.2 Discussion of Mineral Impacts

For the purpose of determining the significance of the project's impacts on mineral resources, a significant impact would occur if the project would:

1) Result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state.

[156] California Department of Conservation. *Generalized Mineral Land Classification Map of the South San Francisco Bay Production-Consumption Region.* 1996.

2) Result in the loss of availability of locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

4.12.2.1 *Impacts to Regional Mineral Resources*

Impact MIN-1:	The Project would not result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state. **(No Impact)**

The Communications Hill area in central San José is the only area within the City that is designated by the State Mining and Geology Board as containing mineral deposits of regional significance. The Airport is more than four miles from Communications Hill. Therefore, the Project would not result in the loss of availability of a known mineral resource that would be of value to the region and residents of the state. **(No Impact)**

4.12.2.2 *Impacts to Mineral Resource Recovery Site*

Impact MIN-2:	The Project would not 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 Airport is not located in or near an area containing known mineral resources. Therefore, the Project would not result in the loss of availability of locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. **(No Impact)**

4.12.2.3 *Cumulative Mineral Resource Impacts*

Impact C-MIN-1:	The Project would not result in a cumulatively considerable contribution to a significant cumulative mineral resource impact. **(No Cumulative Impact)**

As discussed above, the proposed implementation of the Airport Master Plan would not result in the loss of availability of a known mineral resource or mineral resource recovery site. Therefore, the proposed Project would not contribute to a significant cumulative mineral resource impact. **(No Cumulative Impact)**

4.13 NOISE

Noise is an important environmental issue with regard to the operation of most airports. Due to this importance, this section presents a comprehensive analysis of the existing noise environment at the Airport and the projected noise impacts of the Project. Included in this discussion is an overview of how noise is measured, the criteria for determining significant increases in noise levels, and an overview of the comprehensive programs already in place at the Airport to reduce noise impacts. This section focuses on the anticipated impacts resulting from the three principal noise sources that are typically related to an airport development project: aircraft noise, surface transportation (traffic) noise, and construction noise during those periods when construction contemplated by the project is occurring. The information in this section is based primarily on a Noise Assessment prepared for the Project by BridgeNet International in October 2019. The report is Appendix J of this EIR.

4.13.1 Introduction to Noise and Noise Measurement

4.13.1.1 *Noise Fundamentals*

Noise is usually described as unwanted sound. Sound is variations in air pressure that the ear can detect. The scientific unit of sound measurement is the decibel (dB).

The range of sounds in normal human experience can be compressed into the range of 0 dB to 140 dB. As a practical matter, a change of 3 dB is noticeable to an average person, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as a doubling (or halving) of the sound level.

To compensate for the fact that the ear is not as sensitive at some frequencies and sound pressure levels as at others, a number of frequency weighting scales have been developed. The "A" weighting scale is most commonly used for environmental noise assessment because it closely approximates the frequency response of the human ear. When an A-weighting filter is used to measure sound pressure levels, the results may be expressed as sound levels, in decibels (dB or dBA).[157] Table 4.13-1 shows typical sound levels and relative loudness for various types of noise environments.

This reflects an important feature of these descriptors that frequently causes confusion, and which is important to remember in considering the information presented in this section of the EIR. Noise is measured and described by the use of mathematical logarithms, not in a mathematically “linear” fashion. In other words, a noise event of 100 dBA is not twice as “loud” as a noise event of 50 dBA. Rather, a noise event of 53 dBA would contain twice as much “noise energy” as a noise event of 50 dBA. Nor would two noise events of 50 dBA each, when added together, equal a single noise event of 100 dBA. Rather, 50 dBA plus 50 dBA equals 53 dBA in the logarithmic mathematics universally used in the calculation and description of noise.

[157] A-weighting is used for civil aviation and other transportation noise sources. C-weighting amplifies lower frequencies and is used for other types of noise such as military bombing ranges and rocket launches. The FAA does not use C-weighting when evaluating airport projects.

Table 4.13-1: Examples of A-Weighted Sound Levels and Relative Loudness			
Sound	**Sound Level (dBA)**	**Relative Loudness (approximate)**	**Relative Sound Energy**
Jet aircraft, 100 feet	130	128	10,000,000
Rock music with amplifier	120	64	1,000,000
Thunder, snowmobile (operator)	110	32	100,000
Boiler shop, power mower	100	16	10,000
Orchestral crescendo at 25 ft., noisy kitchen	90	8	1,000
Busy street	80	4	100
Interior of department store	70	2	10
Ordinary conversation, 3 feet away	60	1	1
Quiet automobile at low speed	50	1/2	.1
Average office	40	1/4	.01
City residence	30	1/8	.001
Quiet country residence	20	1/16	.0001
Rustle of leaves	10	1/32	.00001
Threshold of hearing	0	1/64	.000001
Source: U.S. Department of Housing and Urban Development, *Aircraft Noise Impact -- Planning Guidelines for Local Agencies*, 1972.			

However, as noted above, since the human ear does not perceive noise with the efficiency of a carefully designed acoustical measuring system, most people do not perceive an increase of 3 dBA as a doubling of noise. Rather, most people perceive an increase of approximately 10 dBA as a doubling of the noise, or, conversely, a reduction of 10 dBA as a halving of the noise.

4.13.1.2 *Environmental Noise Descriptors*

Most environmental noise sources produce varying amounts of noise over time, so the measured sound levels also vary. As described below, various governmental agencies have developed a variety of noise descriptors as a means of quantifying, describing, and regulating these sound levels. This discussion presents an overview of the descriptors that are typically used to assess noise from aircraft and surface traffic as well as construction-related noise.

There are two basic approaches for quantifying, describing, and regulating noise levels that are generally used in the United States for transportation noise sources. These approaches are generally reported in terms of "noise descriptors" that are based upon established principles of physics and reported in numerical terms.

The first approach addresses the noise resulting from a single noise "event." This approach has the most direct relevance to aircraft noise events, which are generally perceived as discrete occurrences. It also is sometimes relevant in assessing construction noise impacts. These "single event" descriptors usually are not as directly relevant or meaningful for assessing surface transportation noise sources. Surface traffic noise, particularly on major arterials or freeways handling large volumes of traffic, is

usually perceived as a more-or-less continuous background noise level that may vary in magnitude from hour to hour, depending upon the total volume of traffic during any such time period, but which is usually not perceived or described as clearly discrete noise events.

While a variety of "single event" descriptors have been developed, the two which have come to be accepted in the United States as the most relevant to analysis of the type performed in this EIR are the "maximum A-weighted sound level" (L_{max}) and Sound Exposure Level (SEL) descriptors. Both of these descriptors have been used in the analysis performed for this EIR and are discussed in this section. In addition, and as discussed in more detail below, the analysis performed for this EIR also provides information in terms of a third descriptor, which is referred to as a "time above" (TA) analysis.

The second type of noise descriptor commonly used to describe aircraft and surface traffic noise is most frequently referred to as a "cumulative" noise descriptor. These descriptors describe in numerical terms the amount of noise occurring at a given location over a defined period of time. This period of time, depending upon the descriptor used, can be as short as one hour, but is more commonly calculated for an annualized 24-hour period. Cumulative noise descriptors can be used to describe cumulative noise levels from a specific source, such as a roadway or an airport, or they can be used to describe the cumulative noise level from all noise sources affecting the location at which the noise environment is being described. For purposes of this EIR, the principal focus has been on analyzing and describing noise levels (cumulative and single event) from those specific noise sources associated with the alternatives that are analyzed in this EIR. As discussed more completely below, the cumulative noise descriptor defined for use in the State of California, and which is used in this analysis, is the "Community Noise Equivalent Level" (CNEL) descriptor.

These descriptors are available tools that measure and describe various aspects or effects of noise that might be generated as a result of implementation of the Project. Each of these descriptors provides particularly useful information for some purposes of the analysis but may not provide as much information as other descriptors in assessing other potential effects of noise. For this reason, the analysis performed for this EIR uses a range of these "tools" (i.e., descriptors) as they are best suited to describe the results of particular aspects of the environmental analysis.

The specific descriptors used in this EIR, and their role in contributing to the analysis, are explained in the following discussion.

Single Event Descriptors Used in this EIR

Maximum A-Weighted Noise Level (L_{max})

The maximum noise level measured in A-weighted decibels is one of the most basic and useful of the single event noise descriptors for purposes of performing an environmental noise analysis. This descriptor describes the maximum noise level reached during a single noise event. This descriptor, however, does not provide any information regarding the duration of the noise event, nor does it attempt to describe or incorporate noise levels of the specific noise event at any level below the maximum level. In other words, if a specific noise event is described as reaching 65 dBA, the reader would know that the maximum level reached during the event was 65 dBA. The reader would not know from this description, and the descriptor does not account for: (1) how long the noise event

remained at 65 dBA; (2) how long the noise event lasted at any noise level below 65 dBA; or (3) how many such events would occur at a given location during any period of time.

However, this descriptor, when used with other information presented in this EIR, is particularly useful in assessing the potential for noise-caused interference with speech communications, the potential for sleep disturbance, or other similar potential effects of a given noise source. This descriptor also is useful, for example, for comparing the relative noisiness of two (or more) different aircraft types.

This descriptor is one of the two essential components of the "time above" (TA) descriptor described below.

Sound Exposure Level (SEL)

This descriptor is measured in terms of A-weighted decibels, but also provides a correction that takes into account the duration of a single noise event. In practical terms, this descriptor is calculated by reference to all of the noise "energy" caused by a single noise event, however long the noise event is generating noise levels at the measuring location within that range. This noise energy is then compressed into a reference duration of one second.

The inclusion of a "duration correction" in the SEL descriptor further facilitates the comparison of noise levels generated by different aircraft types or models. Because of the "duration correction," the SEL noise level for a typical aircraft noise event is usually between 5 - 10 dB higher than the "maximum noise level" for the same aircraft noise event. SEL is an essential acoustical "building block" used to calculate the cumulative noise descriptor used in this analysis, CNEL.

Time Above (TA) Analysis

This "descriptor" is not as widely used in the acoustical field as the other descriptors used in this EIR. However, it can be a useful tool that provides some additional information not otherwise readily discernable by use of the other descriptors discussed in this EIR. Specifically, a TA analysis can facilitate the assessment of the potential for speech interference caused by various noise sources, particularly aircraft noise. In that context, it has been recognized by federal authorities as a tool that may, at least under certain circumstances, be useful in the environmental assessment of an airport project.

This descriptor is used to calculate how many minutes per day a given location is exposed to noise above a defined level. For this EIR, the TA analyses use 75 dBA and 85 dBA as the reference noise levels. Noise studies performed at various locations over a period of years have led to a "rule-of-thumb" generally accepted by acoustical professionals that typical California residential construction provides approximately 25 dB of noise reduction with the windows and doors closed and that the typical noise reduction with windows partially open is approximately 15 dB.

Generally, an intruding noise event would be expected to begin to interfere with normal conversation when it reaches a level of 60 dBA. The "TA 85" values contained in the discussion and tables later in this section represent the number of minutes per day that aircraft noise levels would be expected to exceed approximately 60 dBA inside a typical California house with windows and doors closed, and the TA 75 values represent the number of minutes per day that interior noise levels would be expected

to exceed 60 dBA with windows partially open. Therefore, the TA 75 and TA 85 values represent the outdoor noise levels at which speech interference might begin to occur indoors under typical windows and doors partially open, and windows and doors closed conditions, respectively.

Cumulative Noise Descriptors Used in this EIR

Community Noise Equivalent Level (CNEL)

The cumulative noise descriptor used in the analysis performed for this EIR is CNEL. In the case of aircraft noise, this descriptor is typically used to describe cumulative noise exposure for an annual average day of aircraft operations, including a 5-dB penalty for operations occurring during the evening hours (7:00 p.m. - 10:00 p.m.) and a 10-dB penalty for operations occurring during the nighttime hours (10:00 p.m. - 7:00 a.m.). As a practical matter, this means that aircraft events occurring during the evening hours are treated as three noise events for purposes of calculating CNEL values. Each aircraft noise event occurring during the nighttime hours is treated as if ten aircraft noise events had occurred. This calculation "weighting" or "penalty" for the evening and nighttime hours is included in CNEL to account for the assumption that noise events occurring during those are hours are more "intrusive" or "annoying" to the average person than events occurring during the daytime hours.

The CNEL is similar to the Day-Night Average Level (L_{dn}) descriptor used by the FAA for the evaluation of airport improvement projects and in the Part 150 noise compatibility planning process in states other than California. The City of San José also uses the L_{dn} for assessment of traffic noise and determining impacts from projects under CEQA. The Federal Aviation Regulations (FAR) recognize the CNEL descriptor in California to maintain consistency with state airport noise assessment criteria. The CNEL and L_{dn} are generally equivalent descriptors of the airport noise environment within plus or minus 1.5 dB. The only difference between the two descriptors is that CNEL includes the evening (7:00 p.m. - 10:00 p.m.) weighting penalty, while L_{dn} does not. Therefore, CNEL is the more "conservative" descriptor. The State of California defines 65 CNEL as the noise level "acceptable to a reasonable person residing in the vicinity of an airport." Therefore, noise-sensitive land uses (such as residences and schools) in this area are deemed to be not compatible with airport activity unless certain conditions are met (see discussion in Section 4.13.2.1, below).

One of the most controversial aspects of quantifying aircraft noise exposure in terms of the CNEL is that most people feel that they react to individual aircraft noise events rather than to the annual average CNEL. For this reason, it is important to understand the relationship between single events and the CNEL. The CNEL is calculated by mathematically combining the number of single events that occur during a 24-hour day with how loud the events were and what time of day they occurred. The weighting factors described above for the CNEL have been shown to correlate well with increased sensitivity to noise at night due to the potential for sleep disturbance and typically quieter background (or ambient) noise levels. Because of the inter-relationship between the weighted number of daily noise events and the SELs generated by the events, it is possible to have the same CNEL value for an area exposed to a few loud events as for an area exposed to many quieter events. It is for this reason that supplementing CNEL analysis with analysis performed using some single event descriptors is considered helpful.

It is equally important to recognize the principal purpose for which CNEL is valuable in assessing community noise impacts. Professional studies have been performed around various airports throughout the world to assess community reaction and community annoyance with an airport noise

environment.[158] Those studies have consistently shown that there is very little statistical correlation between community annoyance and single event types of descriptors. In fact, in many studies, the only statistically significant correlation between noise levels and community attitudes towards the noise environment occur when using a cumulative noise descriptor such as CNEL. Therefore, CNEL has special value for two purposes: (1) it is the best (and arguably the only available) scientific means to assess community reaction to long-term noise exposure in a residential environment; and (2) it is, for that reason, a particularly valuable tool for land use compatibility planning.

4.13.1.3 *Noise Assessment Methodology*

The FAA's Airport Improvement Program (AIP) Handbook (FAA Order 5100.38D) describes two methods for evaluating the significance of noise impacts resulting from proposed airport improvements projects. The first test pertains to the relative increase in area inside the 65 CNEL or L_{dn} contour. If the increase in land area inside the 65 CNEL or L_{dn} contour does not exceed 17 percent (measured from the no project condition), the impact is considered insignificant and no further analysis is required. A 17 percent increase in land area is considered by the FAA to be approximately equivalent to a 1 dB increase in cumulative noise exposure, as defined by the CNEL or L_{dn} descriptors.

The second test is applied in situations where the increase in land area inside the 65 CNEL or L_{dn} contour will be 17 percent or greater as the result of an airport improvement project. Under these circumstances the FAA requires that a point-specific analysis be performed for areas where noise-sensitive land uses are located. If this analysis shows that cumulative noise exposure as defined by CNEL or L_{dn} does not increase by 1.5 dB or greater, the aircraft noise impacts of the project are considered insignificant.

In 1990, the Federal Interagency Committee on Noise (FICON) was organized to review federal policies that govern the assessment of airport noise impacts. This committee included representatives from all of the federal agencies that have a significant interest in noise issues, including the FAA, the USEPA, the Department of Housing and Urban Development, and other federal agencies. The FICON focused on the following issues:

- The manner in which noise impacts are determined, including whether aircraft noise impacts are fundamentally different from other transportation noise impacts.
- The manner in which noise impacts are described.
- The extent of impacts outside of the 65 L_{dn} contour that should be reviewed in a National Environmental Policy Act (NEPA) document.
- The range of FAA-controlled mitigation options (noise abatement and flight track procedures) to be analyzed.
- The relationship of the FAR Part 150 process to the NEPA process, including ramifications to the NEPA process if they are separate, and exploration of the means by which the two processes can be handled to maximize benefits.

[158] Examples include *Federal Agency Review of Selected Airport Noise Analysis Issues* (Federal Interagency Committee on Noise, 1992), *Noise-Induced Sleep Disturbance in Residential Settings* (BBN Systems, 1994), and *Report to Congress on Effects of Airport Noise* (FAA, 1993).

The FICON published a report of its findings and recommendations in August 1992. With reference to the assessment of noise impacts related to airport improvement projects, the FICON concluded that the L_{dn} (or CNEL in California) is still the best metric for describing cumulative exposure to aircraft noise, but that in some cases supplementary analysis of noise impacts using other metrics may be appropriate. With regard to cumulative noise exposure outside the 65 L_{dn} or CNEL contour, the FICON report recommended that for noise-sensitive areas exposed to aircraft noise levels of 60-65 L_{dn} or CNEL, further analysis may be provided to determine if noise exposure increases by 3 dB or more as a result of an airport improvement project. From this it may be inferred that a 3 dB increase in L_{dn} or CNEL values in noise-sensitive areas may be considered a significant noise impact.

Supplementary Analysis of Potential Noise Impacts

The FICON report suggested that there may be circumstances where supplementary noise analyses are appropriate to look beyond cumulative noise exposure as defined by the L_{dn} or CNEL. The areas of supplementary analysis suggested by the FICON report include consideration of single events and the time above a certain noise level.

Single-event noise exposure may be quantified in terms of the SEL or maximum A-weighted sound level (L_{max}). As described above, the SEL compresses the acoustical energy of a noise event into a reference time period of one second, whereas the L_{max} is the actual maximum noise level observed during a single noise event. Typically, for aircraft overflights, the SEL is approximately 5-10 dB higher than the L_{max} for the same event. However, there are no FAA-approved or adopted criteria or thresholds for evaluating the significance of changes in aircraft single events that may result from an airport improvement project.

Outside the laboratory, a single-event increase in sound level of at least 3 dB is generally required before most people perceive that a change has occurred. An increase of 5 dB is required before a change is clearly noticeable. A common practice is to assume that a minimally perceptible change of 3 dB represents a significant change in single event noise exposure as defined by the SEL or L_{max}.

Single-event noise exposure also may be described in terms of the number of overflights by potentially noise-significant aircraft during a stated time period. Changes in the number of overflights resulting from a proposed action may be determined by comparing the proposed or projected number of overflights to conditions without the project. Although this information may be useful in considering the perceived impact of a proposed action, there are no established federal, state or local criteria that may be directly applied to determining the significance of such changes. However, the operational projections and assumptions that underlie the analysis in this EIR are described in detail elsewhere in this section. As stated above with reference to the noise levels produced by aircraft single events, the L_{dn} and CNEL descriptors not only account for the cumulative effects of the magnitude and frequency of aircraft single events occurring during a 24-hour period, they are an essential element of the CNEL calculation.

As described above, the TA metric may be used to describe the cumulative number of minutes per day that the noise level exceeds a prescribed threshold for purposes of providing additional information regarding potential speech interference effects of aircraft or other noise. Although the TA provides a useful "single number" indicator of the potential for speech interference, a major limitation is that the TA does not provide information concerning the number of individual events or their timing relative

to activities subject to speech interference. TA analysis also does not account for existing sources of noise within an occupied home, which frequently generate levels of 60 dBA or greater that can cause their own speech interference (e.g., televisions, radios, food processing equipment, and vacuum cleaners). Therefore, for purposes of the analysis performed for this EIR, the TA metric is most useful for providing comparative information regarding the project alternatives and the "no project" condition.

There are no established federal, state or local significance criteria for the type of TA analysis performed for this EIR, and there do not appear to be any significant studies in the professional literature that would support a definitive conclusion regarding specific significance criteria for a speech interference TA analysis. As discussed below, however, the analysis performed for this EIR shows a substantial correlation between relative increases (or decreases) in CNEL and relative increases (or decreases) in TA values at specific locations around the Airport. For that reason, CNEL will be used as a significance surrogate for the TA analysis in the context of this EIR.

4.13.1.4 *Fundamentals of Vibration*

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In the following discussion, a PPV descriptor with units of millimeters per second (mm/sec) or inches per second (in/sec) is used to evaluate construction-generated vibration for building damage and human complaints.

Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile-driving and vibratory compaction equipment typically generates the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess ground-borne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure, and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Damage caused by vibration can be classified as cosmetic or structural. Cosmetic damage includes minor cracking of building elements (exterior pavement, room surfaces, etc.). Structural damage includes threatening the integrity of the building. Damage resulting from construction related vibration is typically classified as cosmetic damage. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances

where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

4.13.2 Environmental Setting

4.13.2.1 *Regulatory Framework*

Overview

The following section presents an overview of noise regulations, plans and policies that pertain to the regulation of noise from aircraft and other sources in the area surrounding the Airport. Generally, the regulation of noise at the aircraft source is solely the responsibility of the federal government. Regulations pertaining to the compatibility of various types of land uses with aircraft or other noise sources are the responsibility of local jurisdictions, based upon guidelines that have been developed by the federal and state governments.

Federal Regulation of Aircraft Noise

FAR Part 36

Federal Aviation Regulation (FAR) Part 36 establishes noise limits for the certification of new turbojet and large turboprop aircraft by the federal government for use in the United States. The limits apply regardless of whether the aircraft is used for air passengers, air cargo, or general aviation. FAR Part 36 standards are comprised of five "stages" which generally pertain to the engine technology used on transport category and turbojet powered aircraft. The oldest models of commercial jet aircraft (e.g., the DC-8 and the Boeing 707), as originally manufactured, were characterized in FAR Part 36 as "Stage 1 aircraft," which are the noisiest of the aircraft classes defined in FAR Part 36. It is presently illegal to operate a Stage 1 commercial aircraft in the domestic United States.

The second class of aircraft defined in FAR Part 36 are characterized as "Stage 2 aircraft." The most common commercial aircraft manufactured domestically that was manufactured as a Stage 2 aircraft are the Boeing 727-100/200 and 737-200 series airplanes and the McDonnell Douglas DC-9. All other factors being equal, Stage 2 aircraft are quieter than Stage 1 aircraft, but noisier than Stage 3 aircraft. Stage 2 aircraft weighing more than 75,000 pounds have been prohibited from operating in the United States since January 1, 2000.

The third class of commercial aircraft defined in FAR Part 36 are referred to as "Stage 3 aircraft." Common Stage 3 aircraft in the domestic commercial fleet include the McDonnell Douglas MD-80 series and many of the Boeing 737-300 (and later) series, Boeing 757, Boeing 767, Boeing 777, and virtually all of the Airbus 300 series airplanes (i.e., A-300, A-310, A-320, etc.).

Stage 4 standards were adopted in 2006, which require a 10-dB reduction in cumulative noise from Stage 3 standards. An example of a Stage 4 aircraft is the Boeing 787. Stage 5 standards were adopted in 2017, which require a 17-dB reduction in cumulative noise from Stage 3 standards.

FAR Part 150

FAR Part 150 establishes a single system for measurement and prediction of aircraft noise and a standardized airport noise compatibility planning program. The primary goals of the Part 150 noise compatibility planning process are the reduction of existing noncompatible land uses around airports and the prevention of additional noncompatible uses through the cooperative efforts of all involved with the planning process. The Part 150 program is voluntary. Typical noise mitigation programs under Part 150 include school and residential sound insulation programs, the purchase and operation of airport noise monitoring systems, acquisition of noncompatible land uses in high noise impact areas, and transaction assistance for relocation of persons desiring to move away from an airport. A FAR Part 150 study was prepared for San José in 1985-1986. See Section 4.13.2.2, below, for a discussion of how various provisions of this study have been implemented.

Airport Noise and Capacity Act of 1990

The Airport Noise and Capacity Act (ANCA) of 1990 required phase-out of relatively noisy Stage 2 aircraft weighing more than 75,000 pounds by December 31, 1999.

State Regulation of Airport Noise

California Airport Noise Regulation

The California Airport Noise Regulation (California Code of Regulations Title 21, Division 2.5, Chapter 6) identifies the 65 CNEL contour for aircraft operations at an airport as the Noise Impact Boundary. Within the Noise Impact Boundary, the airport proprietor is required to ensure that all land uses are compatible with the aircraft noise environment or the airport proprietor must secure a variance from the California Department of Transportation (Caltrans). Under the California Airport Noise Regulation, residences within the Noise Impact Boundary are deemed to be noncompatible, unless certain conditions are met. These conditions include the following: 1) the airport operator has obtained an avigation easement[159] for aircraft noise; 2) the residence was in existence prior to January 1, 1989 and has adequate insulation to ensure an interior CNEL of 45 dB or less; or 3) the residence is owned by the airport proprietor; 4) the residence is a high-rise apartment or condominium having an interior CNEL of 45 dB or less; or 5) the airport proprietor has made a genuine effort to acoustically treat affected residences or acquire avigation easements, or both, but the property owner has refused to take part in the program.

In 1993, since there were land uses inside the Airport's 65 dBA CNEL Noise Impact Boundary that did not meet the conditions of compatibility described above, the City applied for – and received – a variance from Caltrans. In 2012, Caltrans determined that a variance was no longer needed because the conditions described in the previous paragraph had been met by the City. See the subsequent discussion of the Airport's Acoustical Treatment for further discussion.

[159] An **avigation easement** an easement or right of overflight in the airspace above or in the vicinity of a particular property. It also includes the right to create such noise or other effects as may result from the lawful operation of aircraft in such airspace and the right to remove any obstructions to such overflight. Hence, avigation easement permits aircraft approaching an airport to fly at low elevations above private property. This in effect prevents the landowner's near airports from building above a set height or requires the trimming of trees. (Source: uslegal.com)

Local Regulation of Airport Noise

Envision San José 2040 General Plan

The policies of the Envision San José 2040 General Plan that pertain to noise associated with the Airport are listed in Table 4.13-2.

Table 4.13-2: General Plan Policies – Noise & Vibration

Policy	Description
EC-1.1	Locate new development in areas where noise levels are appropriate for the proposed uses. Consider federal, state and City noise standards and guidelines as a part of new development review
EC-1.2	Minimize the noise impacts of new development on land uses sensitive to increased noise levels by limiting noise generation and by requiring use of noise attenuation measures such as acoustical enclosures and sound barriers, where feasible.
EC-1.3	Mitigate noise generation of new nonresidential land uses to 55 dBA DNL at the property line when located adjacent to existing or planned noise sensitive residential and public/quasi-public land uses.
EC-1.7	Require construction operations within San José to use best available noise suppression devices and techniques and limit construction hours near residential uses per the City's Municipal Code. The City considers significant construction noise impacts to occur if a project located within 500 feet of residential uses or 200 feet of commercial or office uses would involve substantial noise generating activities (such as building demolition, grading, excavation, pile driving, use of impact equipment, or building framing) continuing for more than 12 months.
EC-1.10	Monitor Federal legislative and administrative activity pertaining to aircraft noise for new possibilities for noise-reducing modifications to aircraft engines beyond existing Stage 3 requirements. Encourage the use of quieter aircraft at the San José International Airport.
EC-1.11	Require safe and compatible land uses within the Mineta International Airport noise zone (defined by the 65 CNEL contour as set forth in State law) and encourage aircraft operating procedures that minimize noise.
EC-1.12	Encourage the Federal Aviation Administration to enforce current cruise altitudes that minimize the impact of aircraft noise on land use.
EC-2.3	Require new development to minimize vibration impacts to adjacent uses during demolition and construction. For sensitive historic structures, a vibration limit of 0.08 in/sec PPV (peak particle velocity) will be used to minimize the potential for cosmetic damage to a building. A vibration limit of 0.20 in/sec PPV will be used to minimize the potential for cosmetic damage at buildings of normal conventional construction.

Airport Noise Control Program

The Airport's Noise Control Program (NCP) consists of noise abatement procedures and noise remedies, the goal of which is to reduce the Airport noise impacts on the community. The NCP includes Airport "time-of-day" restrictions (commonly referred to as a "curfew"), restrictions on engine run-ups and training operations, as well as FAA-approved noise abatement arrival and departure procedures. For a detailed description of the NCP and its implementation, see Section 4.13.2.2, below.

Santa Clara County Airport Land Use Commission

In 2011, the Santa Clara County Airport Land Use Commission (ALUC) adopted the *Comprehensive Land Use Plan (CLUP) for the Norman Y. Mineta San José International Airport*. According to the CLUP, the ALUC is charged with providing guidance to local jurisdictions to ensure that planned or

proposed land uses established in the vicinity of the Airport are compatible with the aircraft noise environment. The CLUP's land use compatibility standards include maximum interior noise levels for intermittent noise (aircraft single events) that are to be applied to new construction near the Airport. Those levels were used to determine the noise reduction requirements for new buildings during takeoff and landing operations.

The ALUC has also adopted a land use compatibility chart for projects in the vicinity of the Airport that is consistent with the California Airport Noise Regulation. The land use compatibility chart provides a general overview of the types of land uses which are permissible in different aircraft noise environments.

4.13.2.2 *History of Noise Control at the Airport*

Overview

The City of San José has recognized public concerns with noise produced by aircraft operations at the Airport since the early 1970s, evidenced in part by the installation in 1974 of one of California's first aircraft noise and operations monitoring systems. In the more than forty years of responding to aircraft noise concerns, the City has adopted noise abatement and mitigation procedures for use at the Airport and has conducted a variety of noise compatibility studies. In addition, administrative mechanisms have been placed into service to provide input on noise issues by local officials, citizens, aircraft operators, Airport users, and other jurisdictions. Some of the noise abatement and mitigation measures have been implemented in response to the requirements of the California Airport Noise Regulation, while others have grown out of the citizen and user input processes.

Airport noise issues are routinely reviewed and monitored by the Airport Department of the City of San José, the San José Airport Commission, and the ALUC (land use compatibility issues). The County of Santa Clara and Caltrans' Division of Aeronautics also review noise levels on a quarterly basis in accordance with the California Airport Noise Regulation.

In addition, the Ad Hoc Advisory Committee on South Flow Arrivals, which was authorized by the San José City Council in 2017, explores possible solutions to address the noise impacts on residents when weather conditions over the airfield require the Airport to operate in a "south flow" configuration (i.e., when aircraft land from the north of the Airport instead of the usual landing from the south).

Airport Noise Control Program

Note to Reader: No changes to the Airport's Noise Control Program are proposed by the Project. The City plans to continue its implementation irrespective of any decision regarding the proposed Major Amendment to the Airport Master Plan.

The area in the environs of the Airport includes many residential neighborhoods. Recognizing that aircraft noise can result in disruption of conversations, sleep disturbance, etc., the San José City Council adopted the Airport Noise Control Program (NCP) on February 7, 1984. The goals of the NCP are as follows:

> "The goal of the San José Airport Noise Control Program is to encourage use of San José Airport by both air carrier and corporate/business jet aircraft with lower noise signature

characteristics and to discourage Airport use by higher noise signature jet aircraft, both in the transport and non- transport category. The Plan encourages approach and departure flight procedures that will minimize the noise impact on neighboring communities and ultimately seeks to reduce the flight frequency in the most noise sensitive time periods by the older and noisier jet aircraft." (NCP, Section IV.)

The NCP includes multiple components, which are described in the following paragraphs.

Time of Day Restrictions (Airport Curfew).

The Airport's NCP includes restrictions that regulate the time of day when certain aircraft types may schedule operations at the Airport in order to limit the number and type of events occurring during the CNEL "nighttime" period. This restriction is commonly referred to as a "curfew," and it has been effective in reducing aircraft-related noise in the community, particularly because of the "nighttime penalty" calculations inherent in the CNEL metric. The curfew, which was codified in Section 25.03 of the San José Municipal Code in 2003, restricts jet aircraft operations as follows:

- Operations by Stage 2 jet aircraft, regardless of size or weight, are prohibited between the hours of 11:00 p.m. and 7:00 a.m.
- Operations by Stage 3, Stage 4, and Stage 5 jet aircraft are allowed between the hours of 11:30 p.m. and 6:30 a.m., provided that the aircraft's FAR Part 36 Certificated Composite Noise Level is equal to or less than 89.0 EPNdB.[160]

To avoid confusion as to which aircraft comply with the above-stated certificated noise level, the Airport publishes a Schedule of Authorized Aircraft.

Most of the large aircraft currently used by airlines produce noise levels that exceed the composite 89.0 EPNdB standard, so the effect of the curfew is that flights that arrive or depart between the hours of 11:30 p.m. and 6:30 a.m. are not scheduled. This may change in the future as newer aircraft with lower noise levels are manufactured and purchased by the airlines.

The curfew contains an exemption that allows a scheduled airline flight to land at or depart from the Airport during curfew hours if one or more of the following conditions that are beyond the control of the air carrier occur: 1) delays due to adverse weather conditions; 2) delays due to aircraft mechanical problems; and 3) delays due to FAA air traffic control factors. In addition, California state law specifically exempts emergency medical flights from any local curfew restrictions.

The Airport Department informs all tenant airlines and aircraft operators of the time of day restrictions in the NCP. Airport operations staff meet with all new airline entrants at the Airport to inform them verbally of the restricted hours of operation under the NCP and to give copies of the restrictions to the operators. Airport operations staff also are available 24 hours a day to advise whether the operation would comply with the NCP, in the event that an aircraft operator seeks to operate or to schedule an operation during curfew hours.

[160] EPNdB (Effective Perceived Noise in Decibels) is not the same as, and cannot be compared to, the A-weighted decibels that are used in noise reports and environmental documents. EPNdB is measured under defined and standardized parameters. EPNdB is only used to certify aircraft pursuant to FAR Part 36. The composite EPNdB is the arithmetic average of the takeoff, sideline, and approach noise levels, in EPNdB.

If a scheduled operation is delayed, the aircraft operators are informed to contact the Airport operations Manager on Duty to ascertain if an operation during nighttime hours would comply with restrictions in the curfew; operations are approved or denied accordingly. Appropriate recordkeeping is conducted of operations during curfew hours and all operations during the restricted hours are investigated by Airport staff for compliance with the parameters of the NCP, whether or not a complaint is lodged. Administrative citations with a $2,500 fine are issued to operators conducting operations that do not conform to the NCP.

Historically, there has been a very high compliance rate with the time of day restrictions in the NCP. In calendar year 2018, there were 3,383 operations during the curfew hours out of the 183,892 total operations for the Airport (approximately 1.84%). For comparison, calendar year 2017 had 3,400 curfew operations out of the total 171,883 operations for the Airport (approximately 1.98%).

Of the 3,383 curfew operations in 2018, 2,501 were by aircraft permitted to operate during curfew hours. The remaining 882 operations were by aircraft not permitted to operate during curfew hours. Of those 882 operations, 842 were deemed compliant because they were delayed due to circumstances beyond the control of the operator; see list of such circumstances above. The remaining 40 operations were found to be violations and the operators were cited. These violations represent approximately 0.0218% of all operations at the Airport, which results in a curfew compliance rate of over 99.97%.[161]

Restrictions on Engine Run-ups

The NCP also limits maintenance and engine run-ups during the curfew hours to help limit the noise generated during curfew hours.[162] If an aircraft operator must perform engine maintenance run-ups to prepare for a 06:30 a.m. flight, the aircraft is taken to the north end of the airfield to avoid generating noise towards the surrounding residential uses at the southeast end of the airfield. Such engine maintenance run-ups can be performed as early as two hours before the scheduled departure.

The Airport tracks the number of engine maintenance checks performed during curfew hours that require a full engine run-up. In 2018, a total of 13 full engine maintenance run-ups were performed during curfew hours.[163]

Arrival and Departure Noise Abatement Flight Tracks

The NCP requires all jet aircraft arrivals/departures to follow FAA-approved noise abatement flight tracks, except when directed otherwise by air traffic control. These procedures consist of requiring the aircraft to maintain specified headings and altitudes for the purpose of minimizing noise impacts.

Restrictions on Aircraft Training

The NCP prohibits all jet aircraft training operations at the Airport.

[161] City of San Jose Airport Department, Norman Y. Mineta San Jose International Airport 2018 Annual Noise Report, 2019.
[162] The purpose of the run-ups is to test the engine's performance for safety reasons, typically after the engine undergoes maintenance or repair.
[163] City of San Jose Airport Department, Norman Y. Mineta San Jose International Airport 2018 Annual Noise Report, 2019.

Land Acquisition Program

Immediately south of the Airport is a 120-acre area known variously as the Guadalupe Gardens, the Coleman Loop, and the Airport Approach Zone. The area, which is generally bounded by I-880 on the north, the Guadalupe River on the east, and Coleman Avenue on the west and south, is directly under the flight path for aircraft landing and departing the Airport. The area was once a predominately residential neighborhood comprising more than 600 parcels and 800 dwelling units but was purchased and cleared at a cost of approximately $80 million between the late 1960s and early 1990s by the City in response to noise and safety impacts related to aircraft operations. The City also acquired several mobile home parks in Santa Clara that were located in noise affected areas.

Acoustical Treatment Program

The City approved an Acoustical Treatment (ACT) Program on October 26, 1993. The original ACT Program was based upon the predicted location of the 65 CNEL contour for the year 2000, as published in the FAR Part 150 study for the Airport. With the City's adoption of the updated Airport Master Plan in 1997, the ACT Program boundaries were adjusted to reflect the 2010 Master Plan noise contours, as shown in the 1997 EIR (see Figure 3.5.20 of the 1997 EIR). The ACT Program was subsequently modified based upon the predicted location of the 65 CNEL contour for the year 2010, as published in a 2002 update of the FAR Part 150 study. The purpose of the ACT Program was to improve the living environment in residences and schools by reducing interior noise to meet the standards of the California Airport Noise Regulations.

As revised, the ACT Program consisted of three categories:

- Category 1: Acoustical treatment to be provided for all residences and schools within the 2010 65-dB CNEL contour (except those with avigation easements and constructed after 1993).

- Category 2: Acoustical treatment to be provided for all residences and schools within the 2010 63.5-dB CNEL contour (except those with avigation easements and constructed after 1993), provided that federally-approved funds for such treatment can be obtained.

- Category 3: Residences and schools located between the 2010 60-dB and 63.5-dB CNEL contours to be tested, upon request. For residences, if such testing reveals that interior aircraft-related noise levels would exceed 45 dB CNEL in 2010, the ACT Program would be made available, if feasible.[164] For schools, if such testing reveals that interior aircraft-related noise levels will exceed 45 dB L_{eq} (for peak hour aircraft operations during the normal school day) in 2010, the ACT Program would be made available.

The ACT Program concluded in 2009 after all eligible residences and schools (based on the above criteria) had been treated or the homeowner had been offered but declined the treatment. A total of 2,675 single- and multi-family residential dwelling units in San José and Santa Clara were treated. Four schools (Washington Elementary, Center for Employment Training, Sacred Heart, and Montague Elementary) were also treated. Typical noise attenuation treatment under the ACT program included

[164] As used here, "feasible" means the building is of permanent construction whereby adequate noise attenuation can be achieved. Consistent with FAA policy, these criteria exclude mobilehomes.

installation of attic insulation, acoustical windows, solid-core exterior doors, weather-stripping and air conditioning at no cost to the homeowner or school.

Land Use Planning and Control

The General Plans of both San José and Santa Clara contain noise policies regarding new construction in noise-sensitive areas, as defined by the 65 CNEL contour. All proposed general plan amendments and rezonings located within the 65 CNEL contour of the Airport are referred to the Santa Clara County ALUC for the purpose of determining the compatibility of the proposed use with the existing noise environment.

Installation of Aircraft Noise Monitoring System

In 1994, the Airport installed a state-of-the-art noise monitoring system, referred to as ANOMS (Airport Noise and Operations Monitoring System). ANOMS correlates aircraft flight tracks with noise measurements. The system is used to prepare quarterly noise reports, as well as assisting Airport staff in resolving noise complaints.

Conclusion

The result of all of the above-described measures has been a substantial reduction in Airport-related aircraft noise levels and impacts in the surrounding communities since 1978. This reduction has occurred despite the substantial increase in the number of operations at the Airport by jet aircraft during that same period. In addition, with the completion of the above-described ACT Program in 2009, there are no longer any incompatible land uses within the Airport's noise footprint, as defined under State law by the 65-dB CNEL contour. Table 4.13.3 presents the data that quantify some of the more significant historical benefits of the implementation of these noise control measures at the Airport.

Table 4.13-3: Effect of Existing Noise Control Measures

	Calendar Year				
	1978	**1984**	**1991**	**1994**	**2018**
Number of Incompatible Residences within 65-dB CNEL Contour	3,652	2,992	1,887	1,495	0
Population Living in Incompatible Residences	10,049	8,888	5,624	3,751	0
Number of Annual Aircraft Operations by Air Passenger & Cargo Carriers	56,692	66,274	94,906	111,390	136,728
Source: City of San José					

4.13.2.3 *Existing Noise Levels*

Overview

This section describes existing noise sources and noise levels in the Airport vicinity. Included are discussions of noise from aircraft and surface traffic sources. The Airport's aircraft noise monitoring program is described along with ambient noise level measurements conducted at supplemental

locations specifically for this noise impact analysis. Also described are the methods and assumptions used to prepare a noise exposure map for existing aircraft operations and noise levels at the Airport using the CNEL and SEL descriptors. For purposes of this analysis, calendar year 2018 represents baseline conditions.

Existing Aircraft Noise Levels

Airport Noise Monitoring Program

The Airport operates an aircraft noise monitoring system (ANOMS) that incorporates monitoring units, computers, a passive radar device, and software that correlates noise measurement and operational data and allows graphic representation of aircraft flight tracks. Thirteen Remote Monitoring Stations (RMSs) are part of the ANOMS. RMS locations were selected in accordance with the California Airport Noise Regulation to allow accurate location of CNEL contours in residential areas affected by noise from aircraft operating at the Airport.

The City of San José applies the data collected by the ANOMS to prepare quarterly noise monitoring reports and CNEL contours in accordance with the requirements of the California Airport Noise Regulation, and to investigate noise complaints. Figure 4.13-1 shows the RMS locations, and CNEL values at each RMS in 2018 are shown in Table 4.13-4.

Table 4.13-4: Existing (2018) Noise Levels at Remote Monitoring Stations

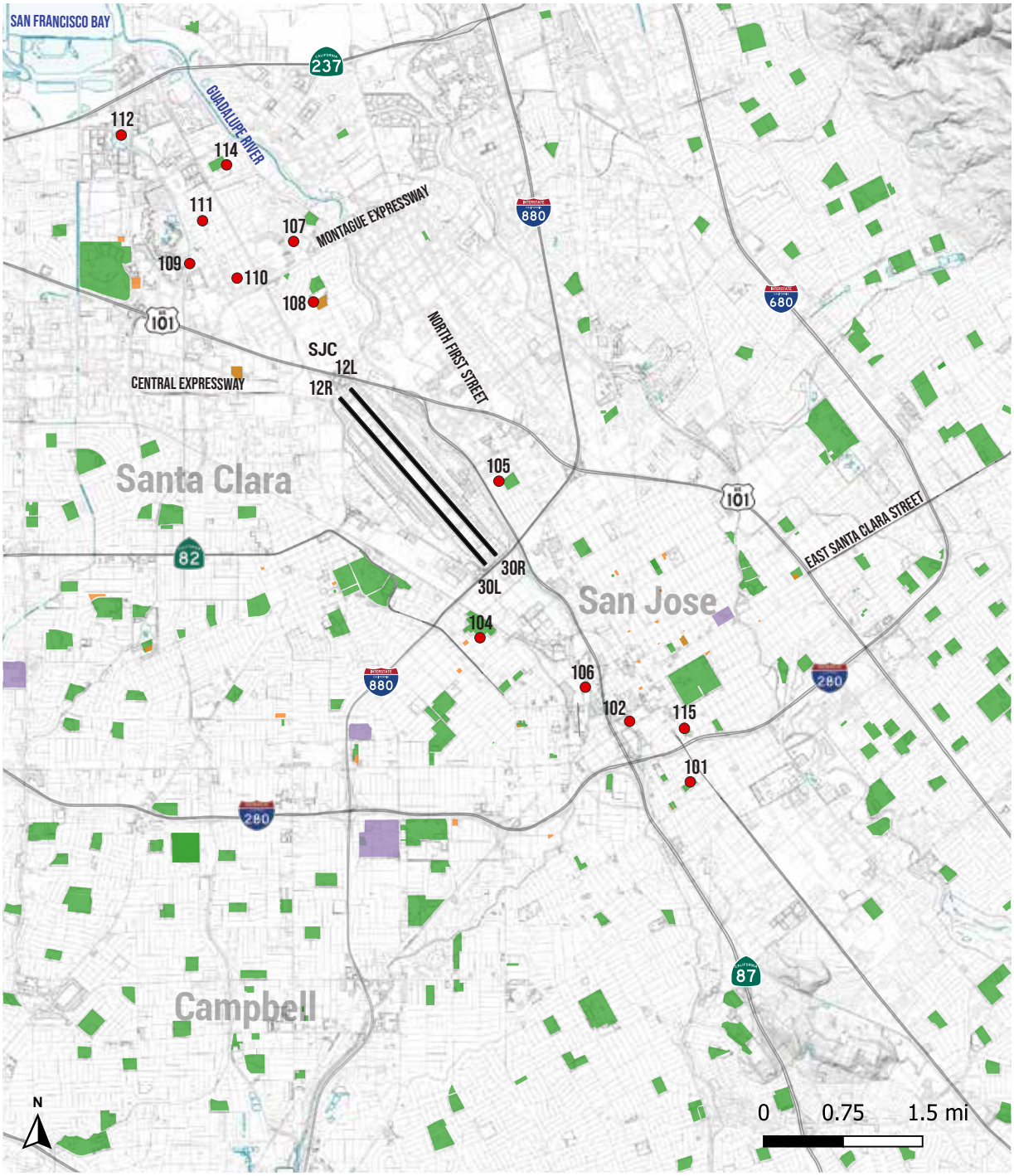
RMS ID Number	RMS Location	RMS City	Measured CNEL		
			Aircraft	Community	Total
101	Oak Street	San José	63.5	64.1	66.8
102	Center for Performing Arts	San José	66.6	68.5	70.7
104	Bellarmine Prep School	San José	58.2	74.0	74.1
105	Rosemary Gardens	San José	60.5	66.0	67.1
106	St. John/Autumn Streets	San José	66.2	66.6	69.4
107	Fire Station 6	Santa Clara	63.3	68.7	69.8
108	MacGregor Lane	Santa Clara	65.3	61.8	66.9
109	Lake Santa Clara	Santa Clara	62.1	58.3	63.6
110	Chestnut Street	Santa Clara	65.8	62.2	67.3
111	Fuller Street Park	Santa Clara	63.3	58.7	64.6
112	Mtn View/Alviso	Santa Clara	59.8	59.9	62.9
114	Fairway Glen Park	Santa Clara	60.4	57.2	62.1
115	3rd/Reed Streets	San José	58.7	65.7	66.5

The locations of the Remote Monitoring Stations (RMSs) are shown on Figure 4.13-1.

Source: BridgeNet International, 2019.

Preparation of Aircraft Noise Exposure Contours

The FAA's Aviation Environmental Design Tool (AEDT), Version 2d, was used to prepare CNEL noise exposure maps for existing operations at the Airport based upon aircraft noise levels and Airport



Noise Monitoring Station

101 Site ID

Runway

Schools

Hospitals

Churches

LOCATIONS OF REMOTE NOISE MONITORING STATIONS | FIGURE 4.13-1

operational data for the 2018 base year. The AEDT was developed for the FAA and represents the federally-approved and preferred method for analyzing aircraft/airport noise exposure. For additional discussion on the AEDT, as well as a description of the technical assumptions that were input into the AEDT for the purpose of quantifying existing and future noise levels, please see Appendix J. These technical assumptions include parameters such as runway usage, aircraft fleet composition, time of day, destinations of departing aircraft, and numbers of daily operations, as well as the computed location of the 65 CNEL contour for aircraft operations under 2018 baseline/existing conditions.

Analysis of Cumulative Noise Exposure

For analysis of cumulative aircraft noise exposure at specific locations around the Airport, 18 reference grid locations were selected. Table 4.13-5 lists the location of each site, along with the jurisdiction within which the site is located.[165] Also shown in Table 4.13-5 are the aircraft CNEL values calculated by the AEDT for each site using the previously described 2018 base year Airport operations and noise level assumptions. Figure 4.13.2 shows the locations of the reference grid point sites on a map of the area surrounding the Airport. Figure 4.13-3 shows the existing/2018 CNEL contours.

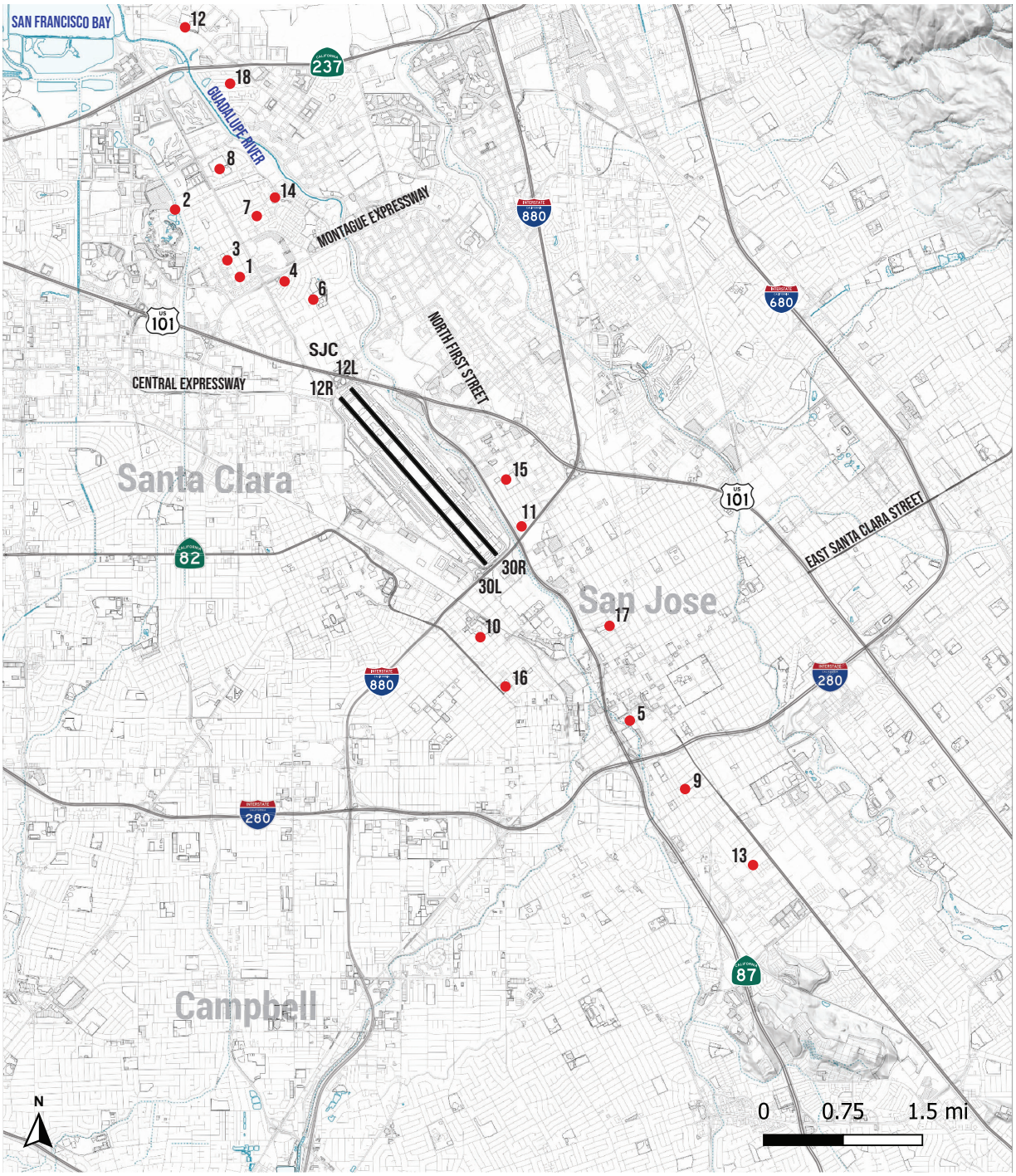
Table 4.13-5: Existing (2018) CNEL Values at Reference Grid Point Locations

Reference Grid Point			
Number	**Location**	**City**	**CNEL**
1	RMS 10 - Residential	Santa Clara	65.2
2	Public Utility (adjacent residential)	Santa Clara	62.2
3	Agnew Park (Agnew Road/Cheeney Street)	Santa Clara	64.4
4	Convalescent Hospital (Clyde Avenue at Loch Lomond St.)	Santa Clara	65.2
5	Center for Performing Arts	San José	66.0
6	Montague Park/School	Santa Clara	65.2
7	Chestnut Street	Santa Clara	61.5
8	Fairway Glen Park/Hughes School	Santa Clara	60.5
9	Washington School	Santa Clara	64.5
10	Bellarmine Prep School	San José	57.6
11	Residential (Rosemary Gardens)	San José	67.8
12	Alviso Community Center (SJ-Alviso Rd/Liberty St)	San José	58.1
13	Cottage Trailer Grove (Monterey Hwy/San José Ave)	San José	62.4
14	Agnews State Hospital (Lick Mill Rd/Lick Mill Blvd)	Santa Clara	59.2
15	Bachrodt School (Sonora Ave/Forrestal Ave)	San José	59.9
16	Hester School (The Alameda/Pershing Ave)	San José	54.1
17	Ryland Park (N First St/Fox Ave)	San José	57.3
18	Lamplighter Trailer Park (SW of SR 237 & N First St)	San José	56.8

Reference grid point locations are shown on Figure 4.13-2.

Source: BridgeNet International, 2019.

[165] Locations were selected to represent areas where the CNELs from aircraft operations at the Airport are high enough to warrant analysis to determine if applicable noise standards will be exceeded.

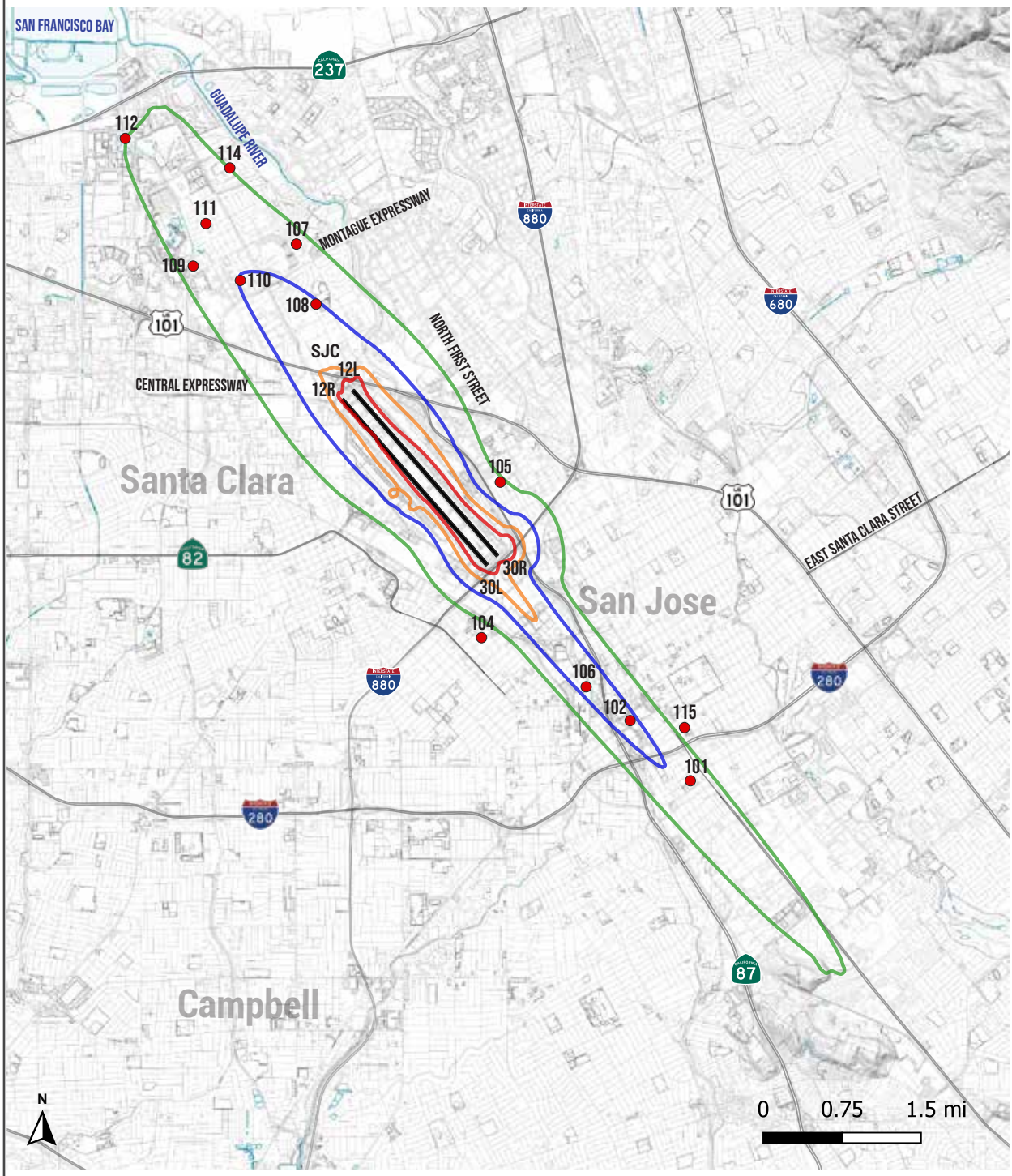


● ~~Noise Monitoring Station~~ Reference Grid Point

101 Site ID

Runway

LOCATIONS OF REFERENCE GRID POINTS | FIGURE 4.13-2



Noise Monitoring Station

101 Site ID

Runway

75 dBA and Greater CNEL Contour

70 dBA and Greater CNEL Contour

65 dBA and Greater CNEL Contour

60 dBA and Greater CNEL Contour

EXISTING / 2018 CNEL CONTOURS | FIGURE 4.13-3

Analysis of Single Event Noise Exposure

In order to compare the relative noise levels of typical jet operations at the Airport, single event noise levels were calculated by the AEDT for each of the above-described reference grid point locations using the SEL metric.

For this analysis, four predominant aircraft types (Boeing 737, Airbus 319, Boeing 737 MAX, and Embraer 175) were used to represent typical air carrier single event aircraft noise exposure in the Airport environs. Table 4.13-6 presents a summary of the highest SEL values calculated by the AEDT for each of the selected aircraft types at the reference grid point locations. In some cases, the highest SEL values were the result of departures, and in others they were the result of arrivals.

Table 4.13-6: SEL Values at Reference Grid Point Locations

Reference Grid Point			SEL			
Num-ber	**Location**	**City**	**Airbus 319**	**Boeing 737**	**Boeing 737 MAX**	**Embraer 175**
1	RMS 10 – Residential	Santa Clara	88.5	89.1	86.7	87.4
2	Public Utility (adjacent residential)	Santa Clara	83.6	86.7	82.7	84.9
3	Agnew Park (Agnew Road/Cheeney Street)	Santa Clara	87.5	88.5	86.1	86.8
4	Convalescent Hospital (Clyde Ave/Loch Lomond St.)	Santa Clara	88.5	87.6	86.5	87.7
5	Center for Performing Arts	San José	89.0	91.3	90.7	88.7
6	Montague Park/School	Santa Clara	87.8	86.8	85.5	87.1
7	Chestnut Street	Santa Clara	82.2	84.2	80.6	83.6
8	Fairway Glen Park/Hughes School	Santa Clara	80.5	83.8	79.1	82.8
9	Washington School	Santa Clara	87.1	89.5	88.7	87.0
10	Bellarmine Prep School	San José	69.1	72.6	71.7	70.0
11	Residential (Rosemary Gardens)	San José	75.3	80.2	74.6	78.9
12	Alviso Community Center (SJ-Alviso Rd/Liberty St)	San José	72.9	77.3	71.2	75.8
13	Cottage Trailer Grove (Monterey Hwy/San José Ave)	San José	84.9	87.2	86.7	85.1
14	Agnews State Hospital (Lick Mill Rd/Lick Mill Blvd)	Santa Clara	78.5	81.5	76.7	80.5
15	Bachrodt School (Sonora Ave/Forrestal Ave)	San José	77.1	80.1	76.3	80.4
16	Hester School (The Alameda/Pershing Ave)	San José	68.2	71.8	70.9	69.2
17	Ryland Park (N First St/Fox Ave)	San José	72.3	75.7	74.9	73.1
18	Lamplighter Trailer Park (SW of SR 237 & N First St)	San José	73.0	78.1	71.2	76.4

Reference grid point locations are shown on Figure 4.13-2.

SEL values for existing and future conditions will be the same as there are no proposed changes to runway usage and/or flight tracks.

Source: BridgeNet International, 2019.

Analysis of Land Use and Population Affected by Existing Aircraft Noise Exposure

Table 4.13-7 summarizes the estimated land area within CNEL contours for 2018 baseline conditions along with the estimated number of residential dwelling units, schools, and churches located within the contours. Table 4.13.7 also provides an estimate of the residential population exposed to varying degrees of noise exposure based upon average household size. Note that those land uses that are deemed compatible with the Airport (e.g., industrial and commercial) are not included in the table. For further discussion of the topic of land use compatibility, please see Section 4.13.2.1.

Time Above Analysis

For each of the 18 reference grid point locations, Table 4.13.8 summarizes the time in minutes per day that the sound level due to 2018/existing aircraft operations at the Airport is above either 75 or 85 dBA.

Existing Non-Aircraft Noise Levels

The most obvious source of noise associated with the Airport is aircraft noise. However, around the Airport are two other principal sources of non-aircraft related noise and several minor sources. Like most urban areas, traffic noise is pervasive in the Airport environs. The second principal source is railroad noise. At locations near the tracks, railroad noise can be substantial. The smaller sources include industries, commercial uses, and the everyday sources associated with human activity, such as barking dogs, lawnmowers, and air conditioning systems.

This analysis of existing non-aircraft noise levels includes the results and a discussion of noise level measurements near the Airport, and specific discussions of railroad noise and traffic noise.

In addition to recording aircraft noise levels, the Airport's ANOMS also records and reports non-aircraft noise levels. The reported CNEL values at the ANOMS sites are shown in Table 4.13-4. The non-aircraft noise levels reported by Table 4.13-4 are for calendar year 2018, which is considered a representative sampling of existing non-aircraft noise levels in the vicinity of the Airport. As can be seen, typical non-aircraft noise levels range from a low of about 57 CNEL at RMS 114 to a high of about 74 CNEL at RMS 104.

Railroad Noise Levels

The UPRR tracks that connect San José to the East Bay are located about ½ mile southwest of the Airport. The major noise sources of a train are the locomotives and cars, and the warning horn that is blown near grade crossings. Presently, there are approximately 24 passenger trains (Caltrain & Amtrak) plus 5 to 10 freight trains that operate on this track daily. Most of the freight service is at night. Railroad operations are not considered a dominant source of noise unless the observer is located very close to the tracks and otherwise away from the direct influence of the Airport or major roadways.

Surface Traffic Noise Levels

Traffic on roadways is a substantial source of noise in the Airport environs as the area is urbanized and there are multiple freeways, expressways, and arterials. The Airport itself is bordered by three freeways (U.S. 101, Interstate 880, and State Route 87) where adjacent noise levels typically exceed

Table 4.13.7: Existing Effects of Aircraft Noise Exposure on Noise-Sensitive Land Uses

Land Use Category	Noise Exposure Range (CNEL, dB)			
	60 +	65 +	70 +	75 +
Residential (dwelling units)	10,301	0	0	0
Hospitals	0	0	0	0
Schools	6	0	0	0
Churches	2	0	0	0
Population	29,048	0	0	0
Total Land Area (acres)	6,024	2.225	803	400

Land uses that are deemed compatible with the Airport are not included in this table. For further discussion of the topic of land use compatibility, please see Section 4.13.2.1.

Source: BridgeNet International, 2019
.

Table 4.13-8: Time Above for Existing/2018 Conditions at Reference Grid Point Locations

Reference Grid Point			Time Above (in minutes per day)	
Number	Location	City	75 dBA	85 dBA
1	RMS 10 – Residential	Santa Clara	12.0	0.1
2	Public Utility (adjacent residential)	Santa Clara	3.5	0.0
3	Agnew Park (Agnew Road/Cheeney Street)	Santa Clara	8.7	0.1
4	Convalescent Hospital (Clyde Ave/Loch Lomond St.)	Santa Clara	13.3	0.1
5	Center for Performing Arts	San José	22.4	0.0
6	Montague Park/School	Santa Clara	14.8	0.0
7	Chestnut Street	Santa Clara	1.3	0.0
8	Fairway Glen Park/Hughes School	Santa Clara	0.4	0.0
9	Washington School	Santa Clara	14.1	0.0
10	Bellarmine Prep School	San José	0.2	0.0
11	Residential (Rosemary Gardens)	San José	23.8	0.1
12	Alviso Community Center (SJ-Alviso Rd/Liberty St)	San José	0.2	0.0
13	Cottage Trailer Grove (Monterey Hwy/San José Ave)	San José	2.7	0.0
14	Agnews State Hospital (Lick Mill Rd/Lick Mill Blvd)	Santa Clara	0.1	0.0
15	Bachrodt School (Sonora Ave/Forrestal Ave)	San José	0.7	0.0
16	Hester School (The Alameda/Pershing Ave)	San José	0.1	0.0
17	Ryland Park (N First St/Fox Ave)	San José	0.8	0.0
18	Lamplighter Trailer Park (SW of SR 237 & N First St)	San José	0.1	0.0

Reference grid point locations are shown on Figure 4.13-2.

Source: BridgeNet International, 2019.

70 dBA L_{dn}.[166] Traffic-related noise levels along major arterials (e.g., Coleman Avenue and North First Street) also exceed 70 dBA L_{dn}.[167] Where there are noise-sensitive land uses (e.g., residences) adjacent to the freeways, Caltrans has constructed soundwalls for noise abatement purposes.

4.13.2.4 *Existing Vibration Levels*

The Airport is located in an urbanized area where there are multiple sources of vibration, the most common of which are trucks, buses, trains, aircraft, heavy construction equipment, and certain manufacturing processes. As noted in Section 4.13.1.4, the typical effect of vibration is a slight rattling of windows, doors, or stacked dishes. Certain construction activities such as pile-driving produce stronger vibration levels that have the potential to damage structures, but such impacts are typically avoided by mitigation measures incorporated into projects.

Low-frequency noise associated with aircraft operations, particularly near the Airport when an aircraft is departing, is common and can cause annoyance. The City is not aware of any instances where such noise has resulted in cosmetic or structural damage to any buildings. Low-frequency noise is accounted in the A-weighted decibel used in community noise assessments.

4.13.3 <u>Discussion of Noise and Vibration Impacts</u>

4.13.3.1 *Introduction*

This section presents the noise impacts of the proposed Amendment to the Airport Master Plan. The significance of the noise impacts is determined based upon a comparison of Airport activity levels in 2037 (i.e., the proposed Airport Master Plan horizon year) to existing (2018)/baseline conditions using the criteria described below.

As described previously in Section 3.2 and as summarized in Table 3.2-1, activity levels at the Airport are projected to be substantially higher in 2037 than in 2018. The higher activity levels will translate into more air passengers, higher volumes of air cargo, additional air carrier, air cargo, and general aviation aircraft operations, and higher volumes of ground traffic. This section calculates the changes in noise levels due to this increased level of activity and compares those changes to existing (2018) conditions.

4.13.3.2 *Thresholds of Significance*

For the purpose of determining the significance of the Project's noise and vibration impacts, a significant impact would occur if the project would:

1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2) Generation of excessive groundborne vibration or groundborne noise levels.

[166] Source: Caltrans, U.S. 101 Express Lanes Initial Study/Environmental Assessment, 2015.
[167] Source: City of San Jose, Envision San Jose 2040 General Plan Final EIR, 2011.

3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

For purposes of this analysis, and in consideration of the applicable federal, state and local noise level criteria described previously in Section 4.13.1, the following significance thresholds are used to evaluate the aircraft and surface traffic noise impacts of the Project.

Existing/2018 conditions is used as the basis of comparison of noise exposure for purposes of determining the significance of Project-related noise impacts.

Aircraft Noise Impacts Criteria

The California Noise Standards have determined that 65 CNEL is the level of noise "acceptable to a reasonable person residing in the vicinity of an airport." This is consistent with federal (FAA and HUD) land use compatibility guidelines and federal noise attenuation grant funding eligibility criteria. Therefore, the City of San José as CEQA Lead Agency has chosen to use this threshold in the EIR, and the primary focus of the noise impact analysis is on areas located within the 65 CNEL contours. However, the noise analysis also addresses areas located between the 60 and 65 CNEL contours in recognition of FICON recommendations.

- CNEL: Changes in cumulative noise exposure in noise-sensitive areas where the existing/baseline noise exposure is 65 CNEL or greater are considered significant if the Project results in a change in CNEL of 1.5 dB or greater. Changes are considered significant in noise-sensitive areas where the existing/baseline noise exposure is less than 65 CNEL if the Project results in a change in CNEL of 3 dB or greater.

- Time Above: A time above (TA) analysis is provided to indicate relative changes in the potential for speech interference. The TA reference levels selected for analysis are 75 and 85 dBA to address potential speech interference inside a typical residential structure within the San José area with the windows open or closed, respectively. There are no generally recognized or officially adopted significance criteria for this descriptor. However, as discussed below, the analysis for this EIR shows that at the Airport, and for the analyzed Project, there is a significant correlation between the magnitude of the predicted CNEL increases or decreases at the reference grid locations and the relative magnitude of the predicted TA increases or decreases at the same locations. Therefore, for purposes of this EIR the determination of significance with respect to CNEL values will be considered a determination of significance for the TA analysis.

- Single Event: Changes in the magnitude of aircraft single event noise exposure, as defined by the SEL metric, are considered significant if the Project results in a change in SEL of 3 dB or greater during individual aircraft operations affecting a noise-sensitive area when compared to existing/baseline conditions.

Surface Traffic Noise Impact Criterion

- Project-related changes in surface traffic noise exposure using the L_{dn} metric are considered significant if they exceed 3 dB and the resulting surface traffic noise level exceeds 60 dB L_{dn}.

Construction-Related Noise Impact Criterion

- Temporary impacts during construction are considered significant if 1) they would occur within 500 feet of a residence or 200 feet of commercial or office uses; 2) would involve substantial noise-generating activities (e.g., building demolition, grading, excavation, pile driving, use of impact equipment, or building framing), and 3) the construction activities would occur for more than 12 months. (Envision San José 2040 General Plan Policy EC-1.7)

Construction-Related Vibration Impact Criterion

- Vibration impacts would be significant if a vibration level of 0.2 inches/sec PPV is exceeded at buildings that are found to be structurally sound but cosmetic damage is a major concern. For historic buildings or buildings that are documented to be structurally weakened, vibration impacts would be significant if a level of 0.08 inches/sec PPV is exceeded.

4.13.3.3 *General Methodology and Assumptions*

Aircraft noise levels resulting from the Project were quantified using Version 2d of the FAA's AEDT, as described in Section 4.13.2.3 for existing aircraft noise levels. Inputs to the AEDT were changed as appropriate to account for changes in the volume of aircraft operations, fleet mix or airfield configuration that would result with implementation of the Project. Determination of significance was based upon the previously-described thresholds of significance using existing/baseline conditions as the basis for comparison. All locations within the existing and future 60-dB CNEL contour were quantified as recommended by the FICON. General assumptions and methodologies with respect to the level of operations, fleet mix, temporal distribution, and distribution of aircraft trip lengths for existing conditions and the Project are presented in Appendix J.

Changes in surface traffic noise levels were calculated using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model and the L_{dn} descriptor. The FHWA Model is the analytical method currently favored by most State and local agencies, including Caltrans, for highway traffic noise prediction.

4.13.3.4 *Aircraft-Related Noise Impacts*

Impact NOI-1:	**When compared to existing/2018 conditions, increases in aircraft-related noise levels under the Project in 2037 would not exceed the thresholds of significance. (Less Than Significant Impact)**

Noise Modeling Assumptions

From an aircraft-noise perspective, the only difference between existing/baseline conditions and the Project is the change in aircraft types and operations, as summarized in Table 3.2-3 and as described

in Appendix J. There are no changes in runway usage and/or flight tracks, the latter of which is under the jurisdiction of the FAA.

Cumulative Noise Exposure Analysis

Figure 4.13-4 shows the CNEL contours for the Project for the 2037 horizon year. Table 4.13-9 provides a comparison of CNEL values between existing/baseline conditions and the Project in year 2037 at the 18 reference grid locations. As described previously, the CNEL analysis takes into account the time of day when a flight occurs, wherein each flight occurring between 7 :00 p.m. and 10:00 p.m. is counted as three flights and each flight occurring between 10:00 p.m. and 7:00 a.m. is counted as ten flights. This accounts for all flights during the Airport's curfew regardless of whether or not the flight is permitted to operate during the curfew.

The table shows there are no locations where the increase in aircraft noise due to the Project would be significant, as defined by the thresholds of significance used for this analysis. Project-related increases in aircraft noise at nine grid point locations would be less-than-significant. The Project would result in aircraft noise decreases or no change at the remaining nine grid point locations. **(Less Than Significant Impact)**

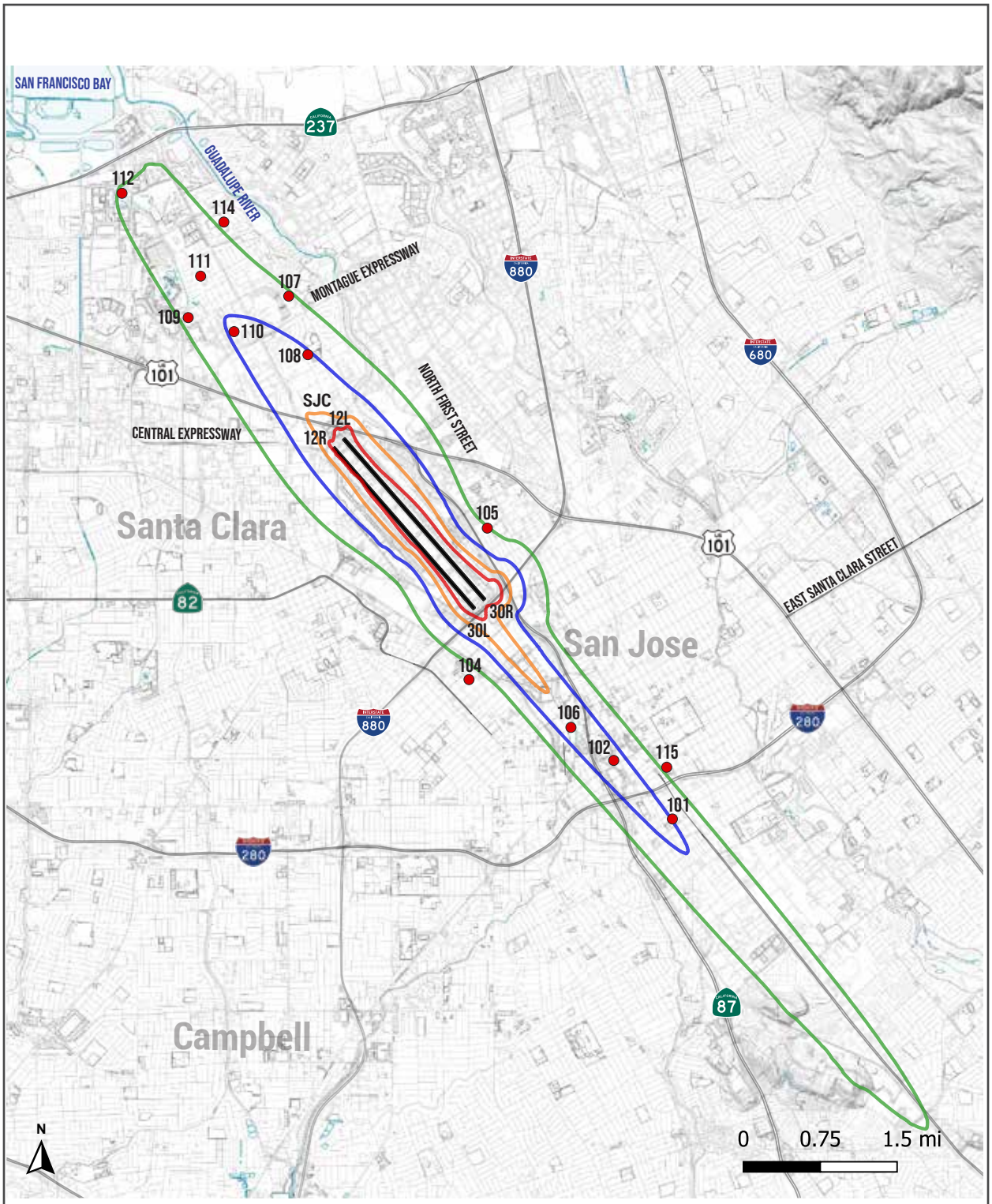
The reader will note that, despite a projected 21% increase in the number of annual aircraft operations in 2037 as compared to 2018, the Airport's noise footprint, defined as the area within the 65-dB CNEL contour, will not change substantially. The explanation is that the additional noise associated with an increase in the number of aircraft operations is largely being offset by the phaseout over time of older noisier aircraft with newer aircraft with quieter engines. The change in aircraft fleet, which is shown in Table 3.2-3, reflects the current practices of air carriers and air cargo airlines to purchase new aircraft because of their substantial improvements in fuel-efficiency, which in turn leads to greater profitability. That trend, combined with the greater noise reduction required in newer aircraft by the FAA (see discussion of FAR Part 36 Regulations in Section 4.13.1.2), has resulted in, and will continue to result in, substantial reductions in the noise footprint at many airports including Mineta San José International.

Time Above (TA) Analysis

Table 4.13-10 compares the Project to existing conditions, with respect to the time in minutes per day that the sound level due to aircraft operations would be above either 75 or 85 dBA. Note that some locations will see a decrease in TA, which again reflects the ongoing replacement of older and noisier aircraft with those that are quieter. For the reasons stated above, the significance of changes in TA is captured by the CNEL analysis.

Single-Event Noise Exposure Analysis

Single-event noise exposure with implementation of the Project would be the same as that which occurs under existing/baseline conditions. Those SEL values are shown in Table 4.13-6. The reason there would be no change in the SEL values is that the Project does not include any modifications to runway usage and/or flight tracks.



Noise Monitoring Station

101 Site ID

Runway

75 dBA and Greater CNEL Contour

70 dBA and Greater CNEL Contour

65 dBA and Greater CNEL Contour

60 dBA and Greater CNEL Contour

PROJECT / 2037 CNEL CONTOURS | FIGURE 4.13-4

Table 4.13-9: Comparison of CNEL Values at Reference Grid Point Locations

Reference Grid Point			CNEL (in dB)		
Num-ber	**Location**	**City**	**2018 Existing**	**2037 Project**	**Project vs Existing**
1	RMS 10 – Residential	Santa Clara	65.2	65.6	+ 0.4
2	Public Utility (adjacent residential)	Santa Clara	62.2	62.5	+ 0.3
3	Agnew Park (Agnew Road/Cheeney Street)	Santa Clara	64.4	64.9	+ 0.5
4	Convalescent Hospital (Clyde Ave at Loch Lomond St.)	Santa Clara	65.2	65.3	+ 0.1
5	Center for Performing Arts	San José	66.0	67.2	+ 1.2
6	Montague Park/School	Santa Clara	65.2	65.4	+ 0.2
7	Chestnut Street	Santa Clara	61.5	61.0	- 0.5
8	Fairway Glen Park/Hughes School	Santa Clara	60.5	60.1	- 0.4
9	Washington School	Santa Clara	64.5	65.6	+ 1.1
10	Bellarmine Prep School	San José	57.6	57.6	0
11	Residential (Rosemary Gardens)	San José	67.8	67.7	- 0.1
12	Alviso Community Center (SJ-Alviso Rd/Liberty St)	San José	58.1	57.7	- 0.4
13	Cottage Trailer Grove (Monterey Hwy/San José Ave)	San José	62.4	63.9	+ 1.5
14	Agnews State Hospital (Lick Mill Rd/Lick Mill Blvd)	Santa Clara	59.2	58.2	- 1.0
15	Bachrodt School (Sonora Ave/Forrestal Ave)	San José	59.9	59.3	- 0.6
16	Hester School (The Alameda/Pershing Ave)	San José	54.1	54.1	0
17	Ryland Park (N First St/Fox Ave)	San José	57.3	57.5	+ 0.2
18	Lamplighter Trailer Park (SW of SR 237 & N First St)	San José	56.8	55.9	- 0.9

Reference grid point locations are shown on Figure 4.13-2.

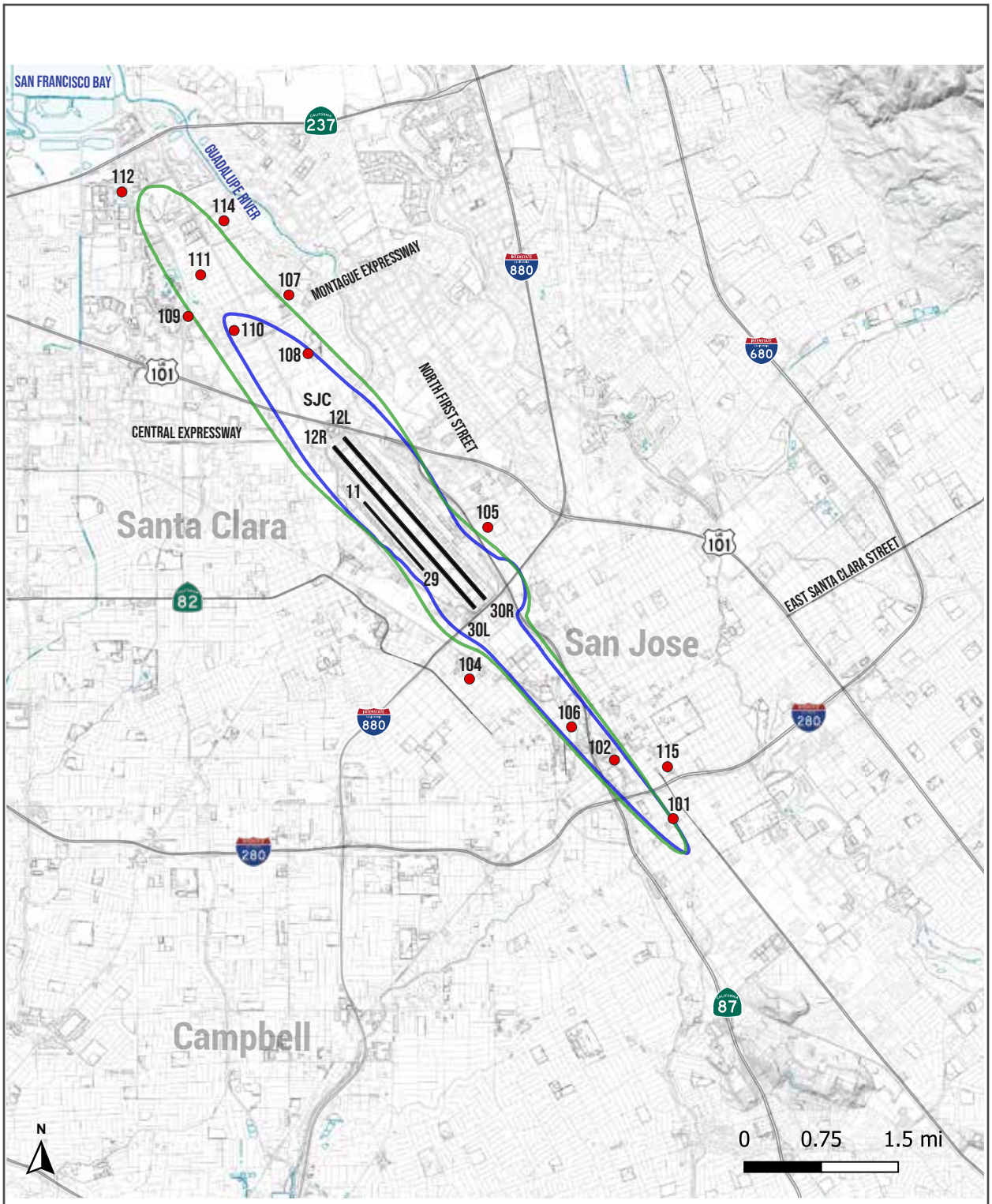
Bold type with shading = significant impact.

Source: BridgeNet International, 2019.

Land Use and Population Affected by Aircraft Noise Exposure

Table 4.13-11 compares the estimated land area within CNEL contours for 2018 baseline conditions to 2037 Project conditions. The table includes a comparison of the estimated number of residential dwelling units, schools, and churches located within the contours, as well as an estimate of the residential population exposed to varying degrees of noise exposure based upon average household size. Note that those land uses that are deemed compatible with the Airport are not included in the table. For further discussion of the topic of land use compatibility, please see Section 4.13.2.1.

In addition to the data contained in Table 4.13-9 that show the Project will not result in significant aircraft-related noise impacts, it is also important to note that Table 4.13-11 shows there will be no incompatible land uses within the Project's 2037 65-dB CNEL contour. This is due in large part to the fact that the boundaries of the Airport's completed ACT Program were larger than the area encompassed by the Project's 2037 65-dB CNEL contour, as illustrated on Figure 4.13-5. For comparison, the total area within the ACT Program boundaries was approximately 3,544 acres, which is 51% larger than the 2,346 acres within the Project's 2037 65-dB CNEL contour.



Noise Monitoring Station

101 Site ID

Runway

2010 ACT Program Boundary

2037 65 CNEL Contour

ACT PROGRAM BOUNDARY COMPARED TO PROJECT / 2037 65-dB CNEL CONTOUR | FIGURE 4.13-5

Table 4.13-10: Comparison of Time Above at Reference Grid Point Locations

Reference Grid Point			Time Above 75 dBA (in minutes per day)			Time Above 85 dBA (in minutes per day)		
#	Location	City	2018 Existing	2037 Project	Project vs Existing	2018 Existing	2037 Project	Project vs Existing
1	RMS 10 – Residential	Santa Clara	12.0	14.4	+ 2.4	0.1	0.1	0
2	Public Utility (adjacent residential)	Santa Clara	3.5	4.6	+ 1.1	0.0	0.0	0
3	Agnew Park (Agnew Road/Cheeney Street)	Santa Clara	8.7	11.7	+ 3.0	0.1	0.1	0
4	Convalescent Hsptl (Clyde Ave/Loch Lomond St.)	Santa Clara	13.3	14.6	+ 1.3	0.1	0.1	0
5	Center for Performing Arts	San José	22.4	30.5	+ 8.1	0.0	0.0	0
6	Montague Park/School	Santa Clara	14.8	17.6	+ 2.8	0.0	0.0	0
7	Chestnut Street	Santa Clara	1.3	1.8	+ 0.5	0.0	0.0	0
8	Fairway Glen Park/Hughes School	Santa Clara	0.4	0.4	0	0.0	0.0	0
9	Washington School	Santa Clara	14.1	18.7	+ 4.6	0.0	0.0	0
10	Bellarmine Prep School	San José	0.2	0.3	+ 0.1	0.0	0.0	0
11	Residential (Rosemary Gardens)	San José	23.8	21.6	- 2.2	0.1	0.5	+ 0.4
12	Alviso Community Center (SJ-Alviso Rd/Liberty St)	San José	0.2	0.1	- 0.1	0.0	0.0	0
13	Cottage Trailer Grove (Monterey Hwy/San José Ave)	San José	2.7	3.0	+ 0.3	0.0	0.0	0
14	Agnews State Hospital (Lick Mill Rd/Lick Mill Blvd)	Santa Clara	0.1	0.1	0	0.0	0.0	0
15	Bachrodt School (Sonora Ave/Forrestal Ave)	San José	0.7	0.8	+ 0.1	0.0	0.0	0
16	Hester School (The Alameda/Pershing Ave)	San José	0.1	0.0	- 0.1	0.0	0.0	0
17	Ryland Park (N First St/Fox Ave)	San José	0.8	0.8	0	0.0	0.0	0
18	Lamplighter Trailer Park (SW of SR 237 & N First St)	San José	0.1	0.0	- 0.1	0.0	0.0	0

Reference grid point locations are shown on Figure 4.13-2.

Source: BridgeNet International, 2019
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Table 4.13.11: Comparison of Aircraft Noise Exposure on Noise-Sensitive Land Uses								
Land Use Category	**Existing/2018**				**Project/2037**			
	Noise Exposure Range (CNEL, dB)				**Noise Exposure Range (CNEL, dB)**			
	60 +	**65 +**	**70 +**	**75 +**	**60 +**	**65 +**	**70 +**	**75 +**
Residential (dwelling units)	10,301	0	0	0	10,602	0	0	0
Hospitals	0	0	0	0	0	0	0	0
Schools	6	0	0	0	6	0	0	0
Churches	2	0	0	0	2	0	0	0
Population	29,048	0	0	0	29,897	0	0	0
Total Land Area (acres)	6,024	2.225	803	400	6,443	2,346	827	399

Land uses that are deemed compatible with the Airport are not included in this table. For further discussion of the topic of land use compatibility, please see Section 4.13.2.1.

Source: BridgeNet International, 2019.

4.13.3.5 *Noise Impacts Due to Increases in Surface Traffic*

Impact NOI-2: When compared to existing/2018 conditions, increases in surface traffic-related noise levels under the Project in 2037 would not exceed the thresholds of significance. (Less Than Significant Impact)

Roadways selected for quantitative traffic noise analysis in the Airport vicinity were those that met the following criteria:

- Roadways that were adjacent to noise-sensitive uses (principally residential uses) for at least a portion of their length; and
- Roadways that would experience an increase in traffic volumes due to the project that would cause an increase of 1 dB or more in cumulative traffic noise levels as defined by the L_{dn}.

Existing/baseline and 2037/Project traffic volumes were obtained from the traffic analysis prepared for this EIR; see Section 4.17 for details. Table 4.13-12 presents the calculated increases in L_{dn} values due to the Project in year 2037 as compared to existing/2018 conditions. All of the projected increases are substantially less than the 3-dB threshold of significance. **(Less Than Significant Impact)**

4.13.3.6 *Construction-Related Noise Impacts of the Project*

Impact NOI-3: The noise impacts associated with the construction phase of the improvements contemplated under the Airport Master Plan would not be significant. (Less Than Significant Impact)

Construction of the capital improvements listed in Table 3.3-1 would be completed over the period of 2020 through 2037. The locations at the Airport where the construction would occur are shown on Figure 3.3-1.

Table 4.13-12: Comparison of Surface Traffic Noise Levels	
Roadway Segment	**Change in Noise Levels: 2037 Project Compared to Existing/2018**
US 101: De La Cruz Boulevard to SR 87	+ 0.1
US 101: SR 87 to Airport Parkway/Brokaw Road	+ 0.1
US 101: Airport Parkway/Brokaw Road to I-880	+ 0.1
I-880: The Alameda to Coleman Avenue	+ 0.1
I-880: Coleman Avenue to SR 87	0
SR 87: US 101 to I-880	+ 0.2
Coleman Avenue: De La Cruz Boulevard to I-880	+ 0.2
De La Cruz Boulevard: US 101 to Reed Street	+ 0.2
North First Street: Brokaw Road to I-880	+ 0.4
Changes are in L_{dn} in dBA. Increases less than 3 dBA are considered less-than-significant. Source: BridgeNet International, 2019.	

There are no sensitive noise receptors (e.g., residences and schools) located within 500 feet of any of the improvement projects that would be constructed under the Project. The closest residence is east of State Route 87 in the Rosemary Gardens Neighborhood, which is more than 600 feet from any construction project contemplated as part of the Project. Given this distance and the presence of the State Route 87 freeway and its soundwall between the closest residences and the Airport, construction-related noise at these residences would not be substantial.

Most off-Airport commercial uses are located more than 200 feet from where construction of improvements would occur. The exception is the commercial uses on Martin Avenue that are within 200 feet of future general aviation facilities.

In addition to the distances between construction sites and off-Airport uses, the construction of the projects in the Airport Master Plan would be limited to allowable days and hours specified in the City's Municipal Code, as outlined below, therefore, construction of the project would not conflict with established noise standards. Compliance with the Municipal Code and standard construction measures would reduce noise from construction activities to a less than significant level.

<u>Standard Conditions</u>

- Construction activities within 500 feet of residences and 200 feet of commercial uses shall be limited to the hours between 7:00 AM and 7:00 PM, Monday through Friday, unless permission is granted with a development permit or other planning approval. No construction activities are permitted on the weekends at sites within 500 feet of a residence. (Municipal Code Section 20.100.450)
- Limit noise-producing signals, including horns, whistles, alarms, and bells, to safety waring purposes only.

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines shall be strictly prohibited.
- Locate stationary noise-generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors as feasible. If they must be located near receptors, adequate muffling (with enclosures where feasible and appropriate) shall be used to reduce noise levels at the adjacent sensitive receptors. Any enclosure openings or venting shall face away from sensitive receptors.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.
- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.
- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule. **(Less Than Significant Impact)**

4.13.3.7 *Construction-Related Vibration Impacts of the Project*

Impact NOI-4:	**The project would not result in generation of excessive groundborne vibration or groundborne noise levels. (Less Than Significant Impact)**

Construction of the capital improvement projects contained in the Project will produce vibration during certain activities, the most notable of which would be pile-driving (if required). As noted previously in Section 4.13.1.4, if strong enough, vibration has the potential to result in cosmetic or structural damage to nearby buildings under certain circumstances. In this case, such impacts are not anticipated to occur because of the separation between the construction sites and nearby land uses. Specifically, the sites for the large improvement projects where pile-driving might be required (i.e., the Terminal B expansion, the new hotel, and the two new parking garages) are on the east side of the Airport where the closest off-Airport buildings are a minimum of 500 feet away on the far side of the State Route 87 freeway. At such distances, vibration levels would not exceed the designated thresholds of significance. **(Less Than Significant Impact)**

4.13.3.8 *Cumulative Impacts*

Impact NOI-C:	**The Project, in combination with other projects and planned growth in the area, would not result in a cumulatively significant noise impact. (Less Than Significant Cumulative Impact)**

Cumulative Aircraft Noise Impacts

The greater San José/Santa Clara County region is overflown by aircraft landing and departing at Mineta San José International Airport, as well as by aircraft utilizing other commercial and general aviation airports within the greater Bay Area. Those airports include, but are not limited to, Oakland International, San Francisco International, Reid-Hillview, Palo Alto, San Martin, Hayward, San Carlos, and Moffett Federal Airfield. High altitude overflights by aircraft flying to/from more distant airports also occur.

The number of these overflights has increased over time due to the growth of the region and increased consumer demand for air travel and cargo shipment, and flight training operations. The loudness of these overflights varies significantly by aircraft type, flight mode (i.e., departure, arrival, or cruise), the altitude of the aircraft, and the aircraft's flight track over the ground. High altitude overflights, which are those commercial aircraft at a cruise altitude, are typically barely audible over background noise, but flights associated with Bay Area aircraft are frequently audible on the ground. The degree to which the noise from these overflights impacts those who hear them involves multiple factors that vary by person and location. Noise, of which the definition is "unwanted sound", can cause annoyance related to flight operations, especially operations associated with flights over areas that had not previously experienced overflights.

The relevant question for this cumulative noise impact analysis is not whether a given community location experiences noise from aircraft associated with multiple airports, but whether all these overflights combined result in a significant noise impact. To illustrate, based on existing flight tracks, and under certain meteorological conditions, communities such as Mountain View and Sunnyvale are exposed to noise from aircraft using San José, San Francisco, Moffett, and Palo Alto Airports. The fact that noise from many of these overflights is audible in these communities is indisputable. From a CEQA perspective, however, the question is limited to whether this cumulative impact is significant per thresholds established in 14 CFR Part 150 regulations.

Based on the federal, state, and local regulations described previously, the 65 dB CNEL contour of each airport defines its noise impact boundary. If regional overflights produce sufficient noise to cause a notable enlargement of the Airport's noise impact boundary, one could argue that the results might constitute a significant cumulative noise impact. However, from the CNEL contours shown on Figure 4.13-1, it can be seen that the Airport's noise impact boundary is limited to the areas along the primary arrival and departure paths. Aircraft associated with other Bay Area Airports are on separate flight tracks and at altitudes where their noise signature is insufficient to affect the size of San José Mineta International Airport's 65 dB CNEL contour. Further, review of the 65 dB CNEL contours of nearby airports shows that there is no overlap with the 65 dB CNEL contour of San José Airport. Therefore, cumulative aircraft noise impacts would not be significant. **(Less Than Significant Cumulative Impact)**

Cumulative Surface Traffic Noise Impacts

In addition to the increased traffic on roadways that will occur due to the proposed Project, traffic will increase as a result of the projected growth in the region in accordance with the general plans of the various cities and counties. The traffic report prepared for this EIR (see Section 4.17) calculated the increase in traffic due to non-Airport regional growth that will occur by year 2037. That increase was

combined with existing volumes and the increase due to the Project, and the total volume was compared to existing/baseline volumes. Utilizing these data, BridgeNet International used the FHWA Transportation Noise Model to calculate the increase in noise associated with the cumulative increase in traffic volumes.

The results are depicted in Table 4.13-13. All noise increases would be less than 3 dBA, which is the threshold of significance. Therefore, cumulative surface traffic noise impacts would be less than significant. **(Less Than Significant Cumulative Impact)**

Table 4.13-13: Cumulative Increases in Surface Traffic Noise Levels

Roadway Segment	Cumulative Change in Noise Levels: 2037 Project Compared to Existing/2018
US 101: De La Cruz Boulevard to SR 87	+ 1.1
US 101: SR 87 to Airport Parkway/Brokaw Road	+ 0.9
US 101: Airport Parkway/Brokaw Road to I-880	+ 1.0
I-880: The Alameda to Coleman Avenue	+ 0.6
I-880: Coleman Avenue to SR 87	+ 0.5
SR 87: US 101 to I-880	+ 1.9
Coleman Avenue: De La Cruz Boulevard to I-880	+ 2.3
De La Cruz Boulevard: US 101 to Reed Street	+ 1.6
North First Street: Brokaw Road to I-880	+ 2.9

Changes are in L_{dn} in dBA.

Increases less than 3 dBA are considered less-than-significant.

Source: BridgeNet International, 2019.

4.14 POPULATION AND HOUSING

4.14.1 Environmental Setting

4.14.1.1 *Regulatory Framework*

Regional and Local

Plan Bay Area 2040

Plan Bay Area 2040 is a long-range transportation, land-use, and housing plan intended to support a growing economy, provide more housing and transportation choices, and reduce transportation-related pollution and GHG emissions in the Bay Area. Plan Bay Area 2040 promotes compact, mixed-use residential and commercial neighborhoods near transit, particularly within identified Priority Development Areas (PDAs).[168]

The Association of Bay Area Governments (ABAG) allocates regional housing needs to each city and county within the nine-county San Francisco Bay Area, based on statewide goals. ABAG also develops forecasts for population, households, and economic activity in the Bay Area. ABAG, the Metropolitan Transportation Commission (MTC), and local jurisdiction planning staff created the Regional Forecast of Jobs, Population, and Housing, which is an integrated land use and transportation plan through the year 2040 (upon which Plan Bay Area 2040 is based).

Envision San José 2040 General Plan

To meet the current and projected housing needs in the City, the *Envision San José 2040 General Plan* identifies areas for mixed-use and residential development to accommodate approximately 120,000 new dwelling units by 2035. Through policies and actions that address orderly growth within the City, buildout of the General Plan is projected to help balance the ratio of local jobs with available housing within the City.

4.14.1.2 *Existing Conditions*

The City of San José's population was estimated to be approximately 1,051,316 people with a total of 335,164 housing units in January 2018. The average number of persons per household in San José was estimated at 3.20.[169] According to the City's General Plan, the projected population in 2035 will be 1.3 million persons occupying 429,350 households.

There is no existing housing within the Airport.

[168] ABAG and MTC. "Project Mapper." Available at: http://projectmapper.planbayarea.org/. Accessed July 2019.
[169] California Department of Finance. *E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2018 with 2010 Benchmark*. Available at: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/. Accessed February 28, 2019.

4.14.2 Discussion of Population and Housing Impacts

For the purpose of determining the significance of the project's impacts on population and housing, a significant impact would occur if the project would:

1) 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)
2) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

4.14.2.1 *Impacts from Inducement of Unplanned Population Growth*

Impact POP-1:	The Project would not 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)**

A project can induce substantial population growth by: 1) proposing new housing beyond projected or planned development levels, 2) generating demand for housing as a result of new businesses, 3) extending roads or other infrastructure to previously undeveloped areas, or 4) removing obstacles to population growth (i.e., expanding capacity of a wastewater treatment plant beyond that necessary to serve planned growth).

The proposed Project would include the construction of a hotel. While this would add a new business to the project site, the business would serve the existing and planned population, and would not induce substantial unplanned population growth.

The proposed Project would not add new land uses or population in the city. The Project would serve the City's existing and planned population growth, as well as increased air passenger demand due to growth within Silicon Valley. As a result, the Project would not induce substantial unplanned population growth, either directly or indirectly. **(Less Than Significant Impact)**

4.14.2.2 *Displacement of Housing*

Impact POP-2:	The Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. **(No Impact)**

The Airport does not include residents or housing units and, therefore, the Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. **(No Impact)**

4.14.2.3 *Cumulative Impacts*

Impact POP-C:	The Project would not result in a cumulatively considerable contribution to a significant population and housing impact. **(No Cumulative Impact)**

The geographic area for cumulative population and housing impacts is the City's boundaries. The Project would serve the existing and planned growth in the City, as well as increased air passenger demand due to growth within Silicon Valley. As discussed above, the Project would not displace residents or housing. The proposed implementation of the amended Airport Master Plan would not result in a population or housing impact. Therefore, the proposed Project would not contribute to a significant cumulative population and housing impact. **(No Cumulative Impact)**

4.15 PUBLIC SERVICES

4.15.1 Environmental Setting

Unlike utility services, public facility services are provided to the community as a whole, usually from a central location or from a defined set of nodes. The resource base for delivery of the services, including the physical service delivery mechanisms, is financed on a community-wide basis, usually from a unified or integrated financial system. The service delivery agency can be a city, county, service or other special district. Typically, new development will create an incremental increase in the demand for public services and the impact of a particular project is generally related to the fiscal impact of providing these public services (e.g., more personnel hours to patrol an area, additional fire equipment needed to service a tall building, etc.). That is a fiscal impact, however, not an environmental one.

CEQA does not require an analysis of fiscal impacts. CEQA analysis is required if the increased demand triggers the need for a new or physically altered (enlarged) facility (such as a school or fire station), because the new physically altered (enlarged) facility would have a physical impact on the environment.

For the purposes of this EIR, a public facilities and services impact is considered significant if the project would result in substantial adverse physical impacts associated with the provision or 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.

Project-related impacts associated with the increased demand for fire protection and police protection services at the Airport are discussed in this section. The cost of providing these services to the Airport are paid by the Airport Enterprise Fund. The Airport is a transportation and commercial use that generates little or no demand on traditionally residential-serving public services such as schools, library, and parks. Similarly, the projected increase in air passengers and proposed Airport facility modifications will have a negligible demand on these services. For this reason, they are not discussed further in this section.

4.15.1.1 *Regulatory Framework*

Envision San José 2040 General Plan

The *Envision San José 2040 General Plan* includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects within the City. The policies listed in Table 4.15-1 are specific to public services and are applicable to the proposed Project.

Table 4.15-1: General Plan Policies – Public Services	
Policy	**Description**
ES-3.1	Provide rapid and timely Level of Service (LOS) response time to all emergencies: -----For police protection, use as a goal a response time of six minutes or less for 60 percent of all Priority 1 calls, and of eleven minutes or less for 60 percent of all Priority 2 calls. -----For fire protection, use as a goal a total response time (reflex) of eight minutes and a total travel time of four minutes for 80 percent of emergency incidents.
ES-3.9	Implement urban design techniques that promote public and property safety in new development through safe, durable construction and publicly-visible and accessible spaces
ES-3.11	Ensure that adequate water supplies are available for fire-suppression throughout the City. Require development to construct and include all fire suppression infrastructure and equipment needed for their projects.
ES-3.13	Maintain emergency traffic preemption controls for traffic signals.

4.15.1.2 *Existing Conditions*

Fire Protection Services and Emergency Medical Aid

Fire protection and emergency medical aid services for the Airport are provided by the San José Fire Department (SJFD). The SJFD currently consists of 33 fire stations, 33 engine companies, nine truck companies, three squad units, and numerous specialty teams and vehicles.[170] City Fire Station 20, which is currently on the east side of the Airport, is dedicated to Airport fire protection and other emergency services. The Airport is required to comply with Federal Aviation Regulations (FAR) Part 139, which sets forth requirements and performance standards for aircraft rescue and firefighting. Under FAR Part 139, air carrier airports have an Aircraft Rescue and Fire Fighting (ARFF) index rating that mandates the required number of ARFF vehicles and minimum levels of extinguishing agents (firefighting foam) availability and application rates, based on the aircraft fleet mix and average number of daily departures. Engine Company 20 is currently staffed and equipped to meet/exceed the "Index D" rating requirements documented in FAR 139.[171] Fire Station (Engine Company) 20 is currently staffed 24 hours per day with six on-duty firefighters per shift. Engine Company 20 currently houses five vehicles, which include four ARFF-specific apparatus and a single smaller, Type 6 response vehicle. Engine Company 20 resources include Engine 20A, 20B, and 20C (ARFF) as front-line ARFF vehicles, and Engine 20D (ARFF) is housed at Station 20 as a reserve. Rescue 20 (Type 6) is utilized to respond to medical events within the secured area of the Airport.[172]

Engine Company 20 is currently staffed (one paramedic and five EMT) and equipped to provide Advanced Life Support (ALS) emergency medical services. Emergency medical service responses to the Airport include an additional ALS resource from a neighboring SJFD Station and County-provided

[170] City of San José. "City of San José Annual Report on City Services 2017-18." Available at: http://www.sanjoseca.gov/DocumentCenter/View/81795. Accessed July 30, 2019.
[171] Index D requires an airport firefighting unit to have three vehicles. One vehicle would be required to carry at least 500 pounds of sodium-based dry chemical or halon 1211 or 450 pounds of potassium-based dry chemical and water with a commensurate quantity of AFFF for foam production. Two vehicles would be required to carry an amount of water and the commensurate quantity of AFFF so that the total quantity of water for foam production carried by all three vehicles is at least 4,000 gallons.
[172] Michael Van Elgort, Deputy Fire Chief – Field Operations, San José Fire Department, Email communications, August 13, 2019.

transport ambulance response. Response time within the airfield and terminals from Engine 20 is within three minutes for apparatus arrival.

FAR Part 139 mandates a 3-minute response time with "water on the fire" for the first arriving Fire Unit (ARFF) and a 4-minute response mandate for additional fire units, as required by Index D, to all areas of the runway. Engine Company 20 currently meets this requirement, as tested via reoccurring simulated alerts.[173]

The City recently approved construction of a new ARFF facility located on the southwest side of the Airport on a currently vacant site. The new ARFF facility is described as Item 16 in Table 2.2-1: Approved Amendments to the 1997 Airport Master Plan and was the subject of environmental review in the City of San José Airport Master Plan EIR Addendum #13. The design and construction of the relocated ARFF is underway; therefore, it is considered part of the baseline environmental conditions, for the purposes of this EIR. The existing ARFF facility would be demolished after the new facility becomes operational. The new ARFF facility would consist of a one to two-story, approximate 14,000 square foot building with five bays for fire trucks.

Vehicular airside access to the station will be provided from existing Taxiway W and landside access will be provided from Coleman Avenue at the existing Coleman Avenue/Newhall Drive signalized intersection.

Police Protection Services

Police protection services for the Airport are provided by the San José Police Department (SJPD). The San José Police Department Airport Division, located on the Airport property at ~~1387~~ 2385 Airport Blvd., was formed in 1990 when the SJPD absorbed the former San José Airport Security Police. In addition to providing all basic police services, the SJPD Airport Division works with the Transportation Security Administration (TSA), Federal Bureau of Investigation (FBI), and other local, state and federal agencies to enforce the Airport Security Plan and ensure compliance with all FAA and TSA security directives, existing regulations, and emergency amendments at the Airport. The division provides Airport patrol services utilizing officers on foot, bicycle, and Segway, as well as in police patrol cars. Additionally, TSA's Passenger Screening Canines (PSCs) are trained to detect explosives and explosive materials in a busy transportation environment. They work with a handler searching travelers and their belongings in the security checkpoint and assist with the efficiency and effectiveness of TSA's screening operations.

The General Plan identifies a service goal of six minutes or less for 60 percent of all Priority 1 (emergency) calls and 11 minutes or less for 60 percent all Priority 2 (non-emergency) calls.

4.15.2 Discussion of Public Services Impacts

For the purpose of determining the significance of the project's impacts on public services, a significant impact would occur if the project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental

[173] Ibid.

impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

1) Fire protection
2) Police protection
3) Schools
4) Parks
5) Other public facilities

4.15.2.1 *Project Impacts*

Impact PS-1:	**The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the 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 services. (Less Than Significant Impact)**

4.15.2.2 *Fire Protection and Emergency Services Impacts*

The proposed Airport Master Plan amendment would modify the Airport Master Plan in several primary categories:

- Modify certain components of the airfield to reduce the potential for runway incursions
- Update the aviation demand forecasts and shift the horizon year from 2027 to 2037
- Modify future facilities requirements at the Airport to reflect updated demand forecasts.

The Project proposes to modify certain components of the airfield to reduce the potential for runway incursions and to improve compliance with current FAA design standards and criteria to ensure a high level of airfield safety. Improving airfield safety would reduce the potential for events and emergencies requiring fire protection, ARFF, and emergency services response.

The Project also includes increased use of the airport (aircraft operation, passenger activity, and air cargo activity) and construction and operation of a 330-room on-site business hotel. The new Fire Station #20 location, Airport changes and increase in activity are not expected to change ARFF response time. Multiple simulated alert responses from the new station location all met the 3-minute mandate, including a 1-minute turnout time.

The new Fire Station #20 location described previously is estimated to increase emergency medical responses to Terminal A, Gate 3 (the most distant gate location). During testing, Terminal A, Gate 3 had an extended response of 1:25 seconds, with a total tested response time of four minutes 35 seconds. Terminal B access was tested to meet the 3-minute standard. Station 20 personnel collected simulated response times, using the current apparatus from the new station location and included a 1-minute

turnout time. All projected times from the new station location are based on simulations not-inclusive of station design and projected enhancements to taxiways. [174]

The proposed airfield modifications would improve airfield safety and reduce potential for incursion events requiring fire protection, ARFF, and emergency medical services. The Project would not require new or physically altered facilities to maintain acceptable response times for fire protection services. **(Less Than Significant Impact)**

Impact PS-2:	**The Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the 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 police protection services. (Less Than Significant Impact)**

4.15.2.3 *Police Protection Services*

The Project proposes to modify certain components of the airfield to reduce the potential for runway incursions and to improve compliance with current FAA design standards and criteria to ensure a high level of airfield safety. Improving airfield safety would reduce the potential for events and emergencies requiring police protection response.

The Project also includes increased use of the airport (aircraft operation, passenger activity, and air cargo activity) and construction and operation of a 330-room on-site business hotel. Development proposed by the Project, particularly the additional passenger activity, would likely require additional police and security service resources to maintain FAR Part 139 compliance. These additional Airport resources would be provided as part of the Project and new or physically altered governmental facilities would not be required to maintain acceptable response times and other performance objectives for police protection services. **(Less Than Significant Impact)**

4.15.2.4 *Cumulative Impacts*

Impact PS-C:	**The Project would not result in a cumulatively considerable contribution to a significant public services impact. (No Cumulative Impact)**

Adequate facilities are present on the Airport grounds to provide fire and police protection services to serve the Project. While the projected increase in air passengers, air cargo, general aviation, and new structures proposed as part of the Project will require additional fire and police staffing, it would not require new or physically altered governmental facilities to maintain acceptable service ratios and response times. The Project would not add considerably to the cumulative growth in calls for service that would be required to serve buildout of the City's General Plan. **(No Cumulative Impact)**

[174] Ibid.

4.16 RECREATION

4.16.1 Environmental Setting

4.16.1.1 *Regulatory Setting*

State

The Quimby Act (California Government Code Sections 66477) was approved by the California legislature to set aside parkland and open space for recreational purposes. It provides provisions for the dedication of parkland and/or payment of fees due in lieu of parkland dedication to help mitigate the impacts from new residential developments. The Quimby Act authorizes local governments to establish ordinances requiring developers of new residential subdivisions to dedicate parks, pay a fee in lieu of parkland dedication, or perform a combination of the two at the discretion of the City.

Local

Greenprint 2009 Update

In December 2009, the City Council adopted the *City of San José Greenprint 2009 Update*, which is the City's 20-year strategic plan for parks, recreational facilities, and programs. As part of the Greenprint and Green Vision, the City has identified two goals related to the trail network: 1) complete 100 miles of interconnected trails by 2022, and 2) complete 130 miles of the trail network by 2035.

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects within the City. The policies listed in Table 4.16-1 are specific to recreation and are applicable to the proposed Project.

Table 4.16-1: General Plan Policies – Recreation

Policy	Description
PR-1.1	Provide 3.5 acres per 1,000 population of neighborhood/community serving parkland through a combination of 1.5 acres of public park and 2.0 acres of recreational school grounds open to the public per 1,000 San José residents.
PR-1.2	Provide 7.5 acres per 1,000 population of citywide /regional park and open space lands through a combination of facilities provided by the City of San José and other public land agencies.
PR-1.3	Provide 500 square feet per 1,000 population of community center space.

4.16.1.2 *Existing Conditions*

The City of San José owns and maintains over 3,500 acres of parkland, including neighborhood parks, community parks, and regional parks. The City also manages 51 community centers, 17 community

gardens, and six pool facilities. Other recreational facilities include seven public skate parks and 57.5 miles of interconnected trails.[175]

4.16.2 Discussion of Recreation Impacts

For the purpose of determining the significance of the project's impacts on recreation, a significant impact would occur if the project would:

1) Increase in 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
2) Include recreational facilities or require the construction of expanded recreational facilities which might have an adverse physical effect on the environment

4.16.2.1 *Impacts to Recreational Facilities from Increased Usage Due to the Project*

Impact REC-1:	The Project would not increase the use of existing neighborhood and regional parks or other recreational facilities. **(No Impact)**

The proposed Project is the implementation of capital improvements at the Airport. The proposed Project does not include residential development and, therefore, would not generate residents that could increase demand upon the existing recreational facilities in the project area. For this reason, the proposed Project would not 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. **(No Impact)**

4.16.2.2 *Impacts to Existing Recreational Facilities*

Impact REC-2:	The Project would not include recreational facilities or require the construction of expansion of recreational facilities which might have an adverse physical effect on the environment. **(No Impact)**

The proposed Project would not include recreational facilities. Some Airport employees may use nearby parks and recreational facilities; however, this would not require the construction or expansion of recreational facilities. **(No Impact)**

4.16.2.3 *Cumulative Impacts*

Impact REC-C:	The Project, in combination with other projects, would not result in a significant cumulative recreation impact. **(No Cumulative Impact)**

The geographic study area for cumulative impacts to recreational facilities is defined as the City boundaries. Cumulative projects generating new residents are required to comply with the City's

[175] City of San José. *Envision San José 2040 Envision San José 2040 General Plan*.

requirements for parkland dedication, provisions of public space, and/or payment of in-lieu fees to minimize impacts of new residents on existing park and recreation facilities. As discussed under Impact REC-1, the Project would not generate new residents. The Project, therefore, would not have a considerable contribution to a cumulative increase in 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. For these reasons, the Project would not result in a considerable contribution to a significant cumulative recreation impact. **(No Cumulative Impact)**

4.17 TRANSPORTATION

The information in this section is based primarily on a Transportation Analysis prepared for the Project by Hexagon Transportation Consultants in November 2019. The report is Appendix K of this EIR.

4.17.1 Environmental Setting

4.17.1.1 *Regulatory Framework*

Congestion Management Program

The Santa Clara Valley Transportation Authority (VTA) oversees the Congestion Management Program (CMP), which is aimed at reducing regional traffic congestion. The relevant state legislation requires that all urbanized counties in California prepare a CMP in order to obtain each county's share of gas tax revenues. State legislation requires that each CMP define traffic LOS standards, transit service standards, a trip reduction and transportation demand management, a land use impact analysis program, and a capital improvement element.

City of San José Transportation Analysis Policy

Historically, transportation analyses prepared under CEQA have utilized delay and congestion on the roadway system as the primary metric for the identification of traffic impacts and potential roadway improvements to relieve traffic congestion that may result due to a proposed Project. However, the State of California has recognized the limitations of measuring and mitigating only vehicle delay at intersections. Therefore, in 2013, Senate Bill (SB) 743 became law, which requires jurisdictions to stop using congestion and delay metrics, such as level of service (LOS), as the measurement for CEQA impacts in a transportation analysis. Per SB 743, by July 2020, all public agencies are required to base the determination of transportation impacts under CEQA on vehicle miles traveled (VMT) rather than LOS.[176]

In February 2018, pursuant to SB 743, the City of San José adopted a new Transportation Analysis Policy, Council Policy 5-1. The policy replaces its predecessor (Policy 5-3) and establishes the thresholds for transportation impacts under CEQA based on VMT instead of LOS. The intent of this change is to shift the focus of transportation analysis under CEQA from vehicle delay and roadway auto capacity to a reduction in vehicle emissions, and the creation of robust multimodal networks that support integrated land uses. All new development and transportation projects are required to analyze transportation impacts using the VMT metric and conform to Council Policy 5-1. The evaluation of a project's impact on LOS at intersections under the jurisdiction of the City of San José is no longer required under CEQA.

Transportation Analysis Policy 5-1 and its accompanying Transportation Analysis Handbook (April 2018) provide screening criteria that determine whether a CEQA transportation analysis is required for both new development and transportation projects. The criteria are based on the type of project and its resulting changes to the transportation system. If a project meets the City's screening criteria, the

[176] VMT measures the amount and distance people drive by personal vehicle to a destination. VMT is measured by multiplying the total vehicle trips by the average distance of those trips.

project is presumed to result in less-than-significant VMT impacts and a detailed VMT analysis is not required under CEQA.

Policy 5.1 also requires preparation of a Local Transportation Analysis (LTA) to analyze non-CEQA transportation issues, including local transportation operations, intersection level of service, site access and circulation, and neighborhood transportation issues such as pedestrian and bicycle access, and recommend needed transportation improvements.

Envision San José 2040 General Plan

The Circulation Element of the *Envision San José 2040 General Plan* contains various goals and policies that are intended to provide a transportation network that is safe, efficient, and sustainable (minimizes environmental, financial, and neighborhood impacts). These policies, which are summarized in Table 4.17-1, apply to all modes of ground transportation (e.g., cars, transit, bicycles, and pedestrians) as well as air transportation.

Table 4.17-1: General Plan Policies – Transportation

Policy	Description
Air Transportation	
IE-4.2	Continue developing a world-class airport and build national and international connections by attracting new air service to it.
IE-4.3	Support development of a transit link connecting the Mineta San José International Airport with light rail transit, Caltrain, and future BART.
IE-4.5	Continue implementation of improvements to Mineta San José International airport facilities pursuant to the Airport Master Plan to maintain and expand regional, trans-continental, and international Airport operations.
IE-4.9	Pursue implementation of a people-mover that serves terminals at the Mineta San José International Airport and provides convenient connection to light rail and future BART transit systems.
TR-13.1	Promote airline service which meets the present and future air transportation needs of residents and the business community, and which minimizes impacts on the surrounding community.
TR-13.2	Implement capital improvements to Mineta San José International Airport as identified in its Airport Master Plan.
TR-13.3	Develop and encourage improved ground access connections between the Mineta International Airport and area freeways and public transit and rail systems
Ground Transportation	
TR-1.2	Consider impacts on overall mobility and all travel modes when evaluating transportation impacts of new developments or infrastructure projects.
TR-2.2	Provide a continuous pedestrian and bicycle system to enhance connectivity throughout the City by completing missing segments. Eliminate or minimize physical obstacles and barriers that impede pedestrian and bicycle movement on City streets. Include consideration of grade-separated crossings at railroad tracks and freeways. Provide safe bicycle and pedestrian connections to all facilities regularly accessed by the public, including the Mineta San José International Airport.
TR-2.5	Integrate the financing, design and construction of pedestrian and bicycle facilities with street projects. Build pedestrian and bicycle improvements at the same time as improvements for vehicular circulation.

San José Bike Plan 2020

The City of San José *Bike Plan 2020* (adopted in 2009) contains policies for guiding the development and maintenance of bicycle and trail facilities within San José, as well as the following goals for improving bicycle access and connectivity:

- Complete 500 miles of bikeways;
- Achieve a five percent bike mode share;
- Reduce bike collision rates by 50 percent;
- Add 5,000 bicycle parking spaces; and
- Achieve Gold-Level Bicycle Friendly Community status.

On the Airport, *Bike Plan 2020* designates bike lanes on Ewert Road. It also designates a Class 1 bike path adjacent to Airport Boulevard at the south end of the Airport that would connect the Guadalupe River Trail to Coleman Avenue.

In the vicinity of the Airport, *Bike Plan 2020* designates bike lanes on Coleman Avenue, De La Cruz Boulevard, Airport Parkway, and Skyport Drive. It also designates the Guadalupe River as a trail corridor.

4.17.1.2 *Existing Conditions*

The transportation network at, and in the vicinity of, the Airport is described in this section. The facilities described are those that directly serve the Airport, as well as those in the Airport environs that are regularly utilized by air passengers, employees, cargo carriers, the general aviation community, etc.

Existing Roadway Network

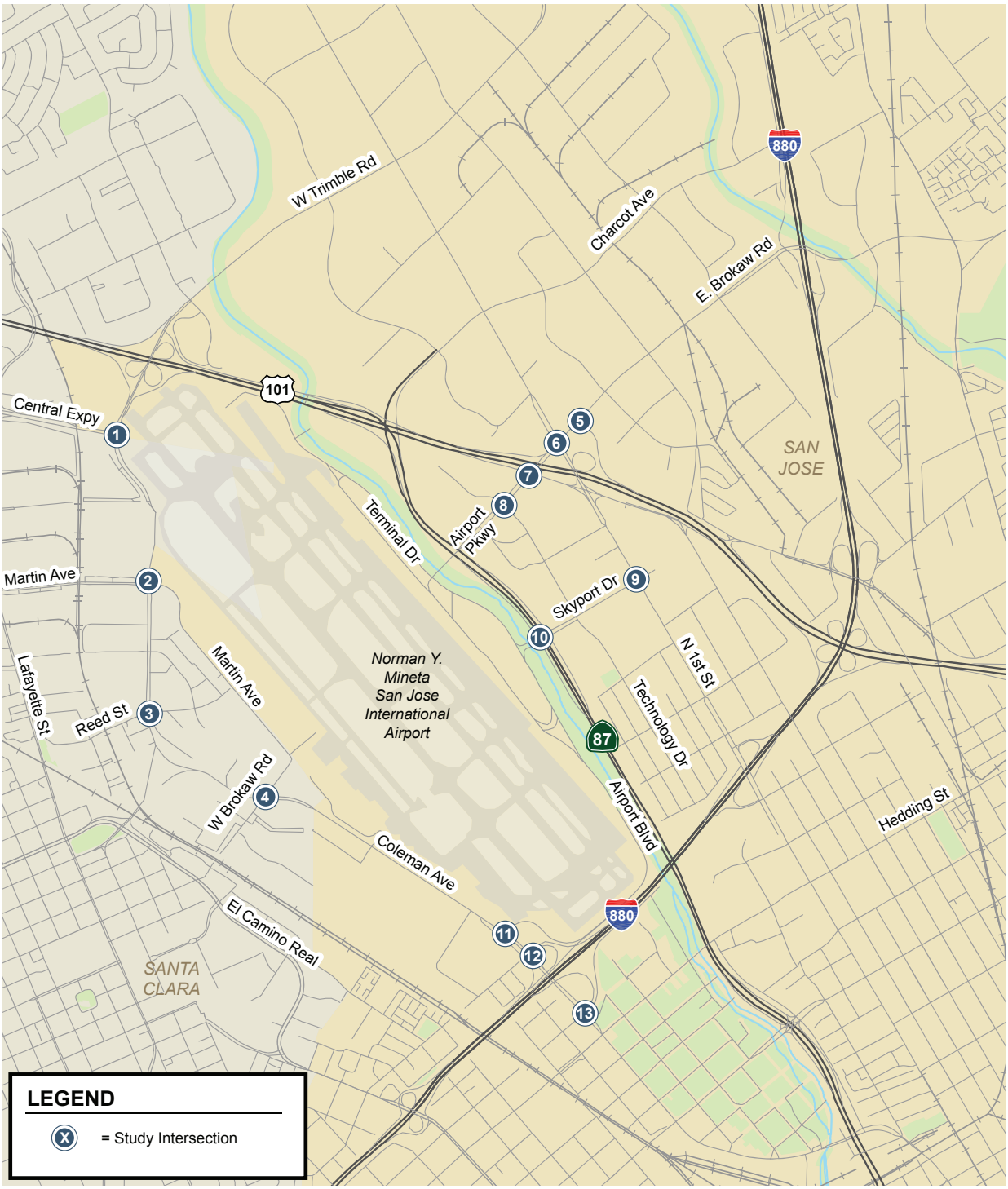
The existing roadway network that serves the Airport is shown on Figure 4.17-1. A description of the key roadways is provided below.

U.S. 101 provides regional access to the Airport via State Route (SR) 87 and via an interchange at Brokaw Road. It is a north/south freeway that extends from San Francisco through San Mateo and Santa Clara Counties. In San José, U.S. 101 is eight lanes wide, including two high-occupancy-vehicle (HOV) lanes (one in each direction).

SR 87 is a north/south freeway that extends from U.S. 101 to SR 85 in San José. SR 87 is six to eight lanes wide, including two HOV lanes (one in each direction). SR 87 provides regional access to the Airport via a full interchange at Skyport Drive.

I-880 is a north/south freeway that extends from Oakland through Santa Clara County. In San José, I-880 is six lanes wide with three mixed-flow lanes in each direction. I-880 provides regional access to the Airport via a full interchange at Coleman Avenue.

De La Cruz Boulevard is a north/south roadway that extends from U.S. 101 to Lewis Street, where it connects to Coleman Avenue. De La Cruz Boulevard is four-to-six lanes wide and has a posted speed



Source: Hexagon Transportation Consultants, Inc., June 27, 2019.

EXISTING ROADWAY NETWORK | FIGURE 4.17-1

limit of 40 mph. De La Cruz Boulevard has mostly discontinuous sidewalks. In the vicinity of the Airport, on-street parking is permitted from Martin Avenue to Reed Street.

Brokaw Road is a west/east roadway that extends from Oakland Road to the U.S. 101 Southbound (SB) Off-Ramp, where it changes names to Airport Parkway. Brokaw Road is six-lanes wide and has continuous sidewalks from Zanker Road to North First Street. The posted speed limit is 40 mph. Brokaw Road has bicycle lanes from Oakland Road to North First Street. To the west, Brokaw Road becomes Airport Parkway.

Airport Parkway is a west/east roadway that extends from the U.S. 101 SB Off-Ramp to the Airport. Airport Parkway is three-to-four lanes wide, and the posted speed limit is 35 mph. Airport Parkway has bicycle lanes throughout the segment, and on-street parking is permitted between Technology Place and SR 87. The on-street parking near the Airport is the designated cell-phone waiting area. Airport Parkway also has continuous sidewalks from the U.S. 101 SB Off-Ramp to the Airport. Airport Parkway becomes Brokaw Road east of Matrix Boulevard.

Skyport Drive is a west/east roadway that extends from the Airport to North First Street. Skyport Drive is two-to-six lanes wide and the posted speed limit is 40 mph. Skyport Drive has bicycle lanes between North First Street and Technology Drive and on-street parking is prohibited. Skyport Drive also has continuous sidewalks throughout the segment but has no sidewalks on the north side of Skyport Drive from the Airport to Technology Drive. In addition, Skyport Drive does not have crosswalks for pedestrians to access the terminals at the Airport. Skyport Drive becomes Airport Boulevard upon entering the Airport.

Coleman Avenue is a north/south roadway that extends from Julian Street to Reed Street. Coleman Avenue becomes De La Cruz Boulevard north of Reed Street. Coleman Avenue is six-lanes wide, and the posted speed limit is 40 mph. Coleman Avenue has bicycle lanes from Santa Teresa Street to Taylor Street and from I-880 to Aviation Avenue. Coleman Avenue has sidewalks along both sides of the street. However, there are discontinuous sidewalks on the east side of the street between the I-880/Coleman Avenue Northbound (NB) Off-Ramp intersection and the I-880/Coleman Avenue SB Off-Ramp intersection. In the vicinity of the Airport, Coleman Avenue has sidewalks on both sides of the street.

Existing Pedestrian Facilities

Existing pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. In the Airport vicinity, sidewalks exist along portions of De La Cruz Boulevard, Martin Avenue, Reed Street, Brokaw Road, Aviation Avenue, Airport Boulevard, Airport Parkway, Skyport Drive, and Coleman Avenue. Marked crosswalks with pedestrian signal heads and push buttons are provided at nearby signalized intersections except for the I-880/Coleman Avenue SB Off-Ramp.

In general, there is a lack of pedestrian facilities to access the Airport and to walk between the parking lots and the passenger terminals. There are no pedestrian facilities to get from Skyport Drive to the terminals. There are no pedestrian facilities to get from Coleman Avenue to the terminals or the air cargo area. Sidewalks to access the general aviation buildings are discontinuous on Brokaw Road and Martin Avenue. To get to the Airport from De La Cruz Boulevard, there is an opening in the fence line at the Central Expressway/De La Cruz intersection, but there are no sidewalks within the Airport

on Ewert Road. There are no sidewalks to get from the long-term parking lot to Terminal A. Figure 4.17-2 shows where sidewalks are discontinuous.

Existing Bicycle Facilities

Existing bicycle facilities at and in the vicinity of the Airport are shown on Figure 4.17-3. At the Airport, there are bike lanes on Ewert Road that provide a route around the north end of the Airport between the De La Cruz Boulevard/Central Expressway intersection and Airport Boulevard. In the vicinity of the Airport, bike lanes exist on Coleman Avenue from Aviation Avenue to Taylor Street, on Airport Parkway/Brokaw Road from SR 87 to Oakland Road, on Technology Drive from Airport Parkway to Skyport Drive, and on Skyport Drive from Technology Drive to North First Street.

The Guadalupe River/Los Alamitos Creek multi-use trail system runs through the City of San José along the Guadalupe River and separates bicyclists from motor vehicle traffic. The Guadalupe River trail is a continuous paved path from West Virginia Street in the south to Alviso Marina County Park in the north. Within the Airport vicinity, the trail runs north-south along the east side of the Airport. The trail provides a connection to the Airport at Airport Parkway but not at Skyport Drive.

Bicycle parking is provided within the Airport. At Terminal A there is short-term bicycle parking located near Hourly Lot 2 and at Terminal B there is short-term bicycle parking located near Hourly Lot 3. In June 2019, the Airport installed eight bike lockers for use by employees. The lockers are freestanding stainless-steel facilities with electronic controllers and smart card readers.

Existing Public Transit Service

Existing transit service in the vicinity of the Airport is described below and shown on Figure 4.17-4.

VTA Bus Route 60 provides service to the Airport terminals from the Metro/Airport light rail transit (LRT) station on North First Street and from the Santa Clara Transit Center/Caltrain Station.[177] Route 60 will also connect to the Milpitas BART Station, which is scheduled to open in ~~December 2019~~ 2020.

The VTA's LRT system operates along North First Street approximately 0.5-mile east of the Airport. The LRT serves San José, Milpitas, Santa Clara, Sunnyvale, Mountain View, and Campbell. The LRT also serves the San José Diridon Station with connections to Caltrain, Altamont Commuter Express (ACE), Capitol Corridor, and Amtrak trains. As noted above, VTA Bus Route 60 provides service between the Metro/Airport LRT Station and the Airport terminals.

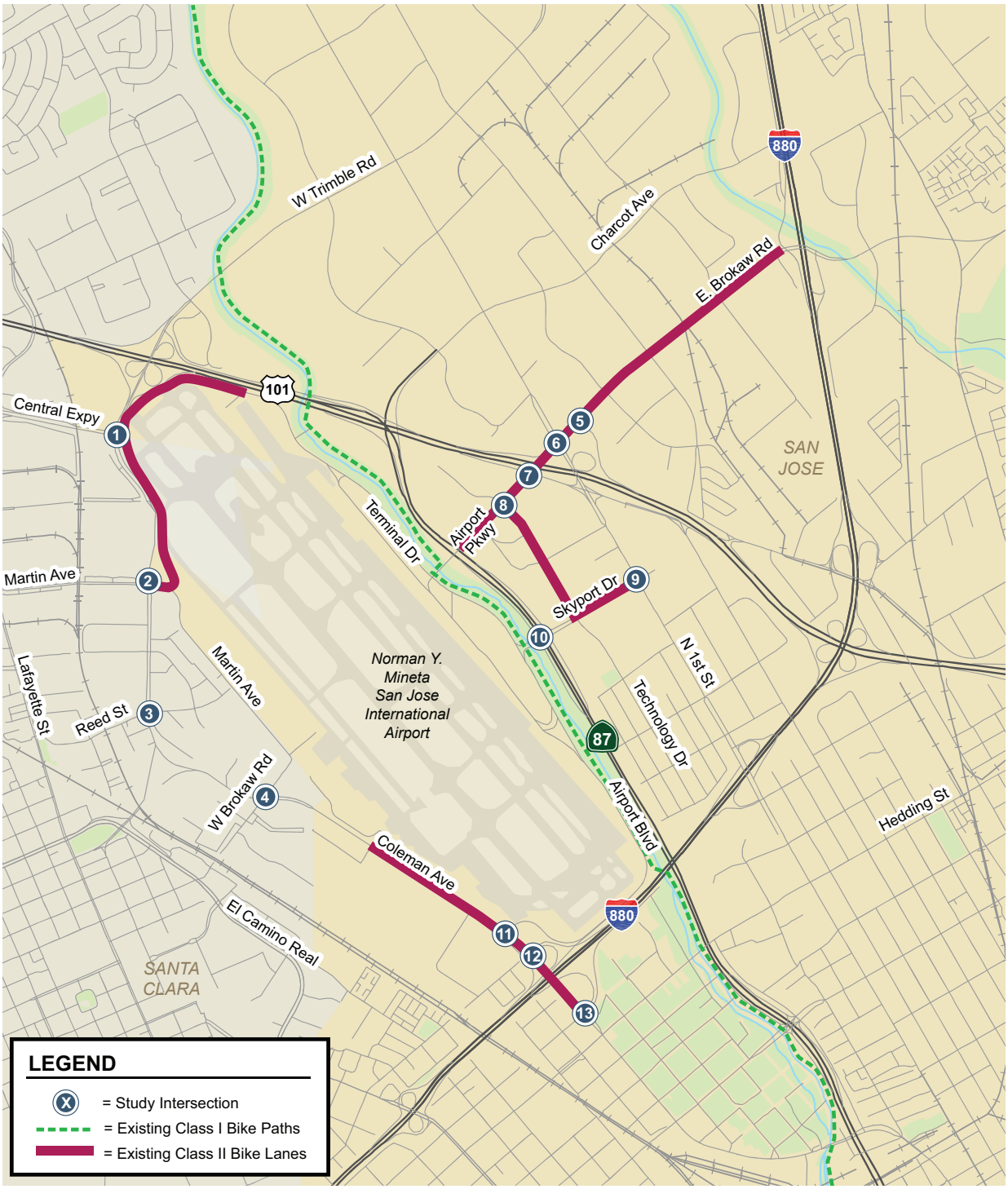
The Santa Clara Caltrain Station is located approximately 0.5-mile west of the Airport. Caltrain operates between San Francisco on the north and Gilroy on the south. Currently, there are 92 trains each weekday, 28 trains on Saturdays, and 24 trains on Sundays. As noted above, VTA Bus Route 60 provides service between the Santa Clara Caltrain Station and the Airport terminals.

In addition to the above, the Airport operates an on-Airport shuttle bus system that provides connections between the passenger terminals, rental car center, and the economy parking lot.

[177] In 2019, VTA Bus Route 10 was integrated into Route 60.

Source: Hexagon Transportation Consultants, Inc., June 27, 2019.

EXISTING PEDESTRIAN FACILITIES | FIGURE 4.17-2



Source: Hexagon Transportation Consultants, Inc., June 27, 2019.

EXISTING BICYCLE FACILITIES | FIGURE 4.17-3

Source: Hexagon Transportation Consultants, Inc., June 27, 2019.

EXISTING PUBLIC TRANSIT FACILITIES | FIGURE 4.17-4

Existing Private Transportation Service

Numerous private entities provide transportation service to and from the Airport. These include shuttles between hotels and off airport parking sites, as well as taxis and limos. Transportation network companies (TNCs) such as Lyft and Uber also serve the Airport. Twelve rental car companies currently operate at the Airport in the Rental Car Center, which is located near Terminal B.

Scheduled private bus service includes 1) Greyhound Route 86, which runs between King City and San José (Airport and Downtown); and 2) Monterey Airbus, which provides service between Monterey and San Francisco International Airport (SFO), with stops at the Airport.

Existing Transportation Demand Management Program

The Airport's existing transportation demand management (TDM) program includes the following components designed to reduce the total volume of surface traffic operating at the Airport:

- The Airport contributes funding toward the operation of VTA Bus Route 60, which provides a connection between the Airport, LRT, Caltrans, and BART.
- All Airport employees are provided with free VTA bus/rail passes, which allows unlimited use of all VTA bus and LRT lines.
- The Airport has constructed Cell Phone Waiting Areas on Airport Boulevard and on Airport Parkway. These facilities reduce the volume of traffic circling on the Airport's roadways that are picking up arriving passengers.
- The Airport has implemented a "Commercial Vehicle Trip Fee" wherein each trip to the Airport by a commercial vehicle (e.g., shuttle, taxi, limo, bus, Lyft, Uber) is charged a fee. This serves to reduce unnecessary vehicle trips.
- Information centers in the Airport's passenger terminals provide information regarding public and private transit options for all visitors.

The TDM Program will continue irrespective of any decision by the City regarding the Project.

Existing Airport-Related Traffic Volumes

The volume of traffic associated with existing/baseline activity at the Airport was determined through intersection and driveway counts. AM and PM peak hour trips were counted in November 2018[178]. The peak hour trips were counted at all intersections and driveways that serve Airport facilities. By measuring total volumes, the counts capture all Airport-related trips: passengers, employees, air cargo, general aviation, etc. The existing daily trips were estimated by factoring the AM and PM peak hour trips based on the number of daily passengers compared to peak-hour passengers derived from Airport data (see Appendix K). The total Airport trip generation was divided by the average number of passengers in November 2018. While passengers were used as the independent variable, the trip rates represent all Airport trips for all purposes.

Based on the traffic counts and the above-described methodology, the data in Table 4.17-2 show that the existing (2018) average daily traffic volume at the Airport is 56,380 trips, of which 4,203 trips (7%) occur during the AM peak hour and 3,612 trips (6%) occur during the PM peak hour.

[178] Airport activity level in November is representative of that which occurs throughout the year.

Existing Vehicle Miles Traveled (VMT)

As discussed previously in Section 4.17.1.1, the City of San José adopted Transportation Analysis Policy 5-1 in February 2018, which established the thresholds for transportation impacts under CEQA based on VMT instead of LOS. Pursuant to the new policy, the City published its Transportation Analysis Handbook (April 2018), which details the procedures and methodology to be utilized for calculating and evaluating VMT for a variety of development and transportation projects.

Table 4.17-2: Existing (2018) Airport-Related Traffic Volumes

	Daily	AM Peak Hour			PM Peak Hour		
Activity Level	**Trips** [b]	**In**	**Out**	**Total**	**In**	**Out**	**Total**
14.8 million passengers/year [a]	56,380	2,273	1,930	4,203	1,974	1,638	3,612

[a] Calculated based on SJC Monthly Activity Report for November 2018 (i.e., the month when the traffic counts were taken). Actual passenger volume for calendar year 2018 was 14.3 million based on SJC Monthly Activity Reports for January – December.

[b] Daily trips were estimated by factoring the AM and PM peak hour trips based on the ratio of AM and PM passengers compared to daily passengers.

AM and PM volumes are from counts taken at all Airport entrances and driveways in November 2018.

Source: Hexagon Transportation Consultants, 2019.

The Handbook specifies the metric to be utilized to evaluate VMT impacts for certain types of projects; VMT/capita for residential projects and VMT/employee for office and industrial projects are two examples. While the Handbook addresses many land use categories, it does not address airports. Therefore, City staff determined that VMT/Airport User would be the most appropriate metric to be used.

Methodology for VMT Analysis

The San José Travel Demand Forecasting Model (CSJ Model) was to calculate Airport VMT under existing and future conditions. The following paragraphs describe the modeling process for the Airport.

Modeling of Airport Travel: One of the components of the CSJ model is the Air Passenger Model (APM). The APM estimates trips made by air passengers traveling to and from the Airport. The model uses the daily number of enplanements, socio-economic characteristics, travel time, cost and distance to estimate trips generated by airport users. The APM model was used to forecast the change in (ground) traffic associated with the Project's projected increase in air passenger activity.

Land Use Assumptions: The Airport is represented by four traffic analysis zones (TAZs) in the CSJ model. Two TAZs represent the area west of the runways, one TAZ is used to model the employees

working at the terminals and one TAZ represents the airline passengers arriving at and departing from the airport.

Airport Model Validation: The APM estimates the number of arriving and departing passengers by mode of travel, i.e., personal vehicles (self-drive and drop-off), public transit, and on-call transportation (taxi, limousine). Note that the AMP does not explicitly model ride sharing services or TNC's such as Lyft and Uber since the APM model was developed from 1990 travel data when these services were not available. However, ride sharing vehicles are accounted for in the model's vehicle trip generation estimates since these vehicles are included in the traffic counts.

Trip Generation: Two types of trips are generated by the Airport: work trips made by airport employees and air passenger trips, made by passengers arriving at and leaving from the Airport. Model validation of Airport trips was aimed at matching existing (2018) peak hour and daily vehicle and transit trips made by both Airport employees and air passengers. AM and PM peak hour traffic counts were obtained at all driveways and intersections surrounding the Airport. Daily traffic volumes generated by the Airport were estimated by factoring the AM and PM peak-hour trips. The CSJ model was run for the year 2018 and the model-estimated vehicle trips were compared to the 2018 traffic counts. As shown in Appendix K, the modeled values are similar to the actual counts obtained in 2018.

Trip Distribution: The trip distribution pattern of the work trips was estimated with the home-based work distribution sub-model of the CSJ model. The trip lengths and directional orientation of the work trips made by Airport employees assumed the same distribution patterns as other work trips made by employed residents in the County. The distribution of the air passenger trips was estimated based on travel characteristics derived from the MTC's 1990 Air Passenger Survey. This survey was conducted to obtain travel characteristics of air passengers at the three major airports in the Bay Area (San Francisco, Oakland and San José). This comprehensive survey provides insight in travel patterns of four different trip purposes (resident-business, resident-nonbusiness, non-resident business and non-resident non- business) at each of the airports. The distribution of Airport trips was based on percentages of Airport trips made by residents and business travelers with origins and destinations in the nearby counties. The share of passenger trips for each county was obtained from the 1990 Air Passenger Survey. The passenger trips by county were then disaggregated to the TAZ level based on socio-economic characteristics (household population, employed residents and number of jobs).

Mode Choice: The air passenger mode choice model estimates the number of trips by mode for each of the four aforementioned trip purposes made by air passengers. Air passenger trips by mode are estimated for personal vehicles (self-drive and drop off), transit and on-call.

Results: Using the San José travel demand model, the existing VMT for the Airport calculates to 755,742 miles per day (see Table 4.17-3). This includes all types of trips: passengers, employees, air cargo, general aviation, etc. While the trips represent all Airport users, the number of passengers is used as a representative statistic because that number is how Airport usage is typically tracked and forecasted. As the number of passengers increases, so increases other Airport users such as employees and air cargo. Dividing by the number of daily passengers yields a VMT per Airport user number of 18.64 miles. While the number is expressed per passenger, it actually represents all Airport-related trips.

Table 4.17-3: Existing (2018) Airport-Related Vehicle Miles Traveled	
Annual Passengers [a]	14,800,000
Number of Daily Passengers [Assume 365 Days]	40,548
Daily Vehicle Trips [Modeled]	56,055
Daily VMT	755,742
Daily VMT per Passenger	18.64

[a] Calculated based on SJC Monthly Activity Report for November 2018 (i.e., the month when the traffic counts were taken). Actual passenger volume for calendar year 2018 was 14.3 million based on SJC Monthly Activity Reports for January – December.

There is a small (and inconsequential) difference between the counted and modeled daily vehicle trips.

Source: Hexagon Transportation Consultants, 2019.

4.17.2 Discussion of Transportation Impacts

For the purpose of determining the significance of the project's impacts on transportation, a significant impact would occur if the project would:

1) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian paths
2) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)
3) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible land uses (e.g., farm equipment)
4) Result in inadequate emergency access

4.17.2.1 *Conflicts with Circulation System Plans, Ordinances and Policies*

Impact TRN-1:	**The Project would not conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian paths. (Less Than Significant Impact)**

As described previously in Section 4.17.1.1, the *Envision San José 2040 General Plan* contains policies pertaining to the City's transportation network. Table 4.17-4 lists the policies that are applicable to the Airport and describes the Project's consistency with them. Based on the information contained in Table 4.17-4, the Project does not conflict with any of the applicable policies.

As pertains to the Airport, the *San José Bike Plan 2020* designates bike lanes on Ewert Road. It also designates a Class 1 bike path adjacent to Airport Boulevard at the south end of the Airport that would connect the Guadalupe River Trail to Coleman Avenue. In the vicinity of the Airport, *Bike Plan 2020* designates bike lanes on Coleman Avenue, De La Cruz Boulevard, Airport Parkway, and Skyport Drive. It also designates the Guadalupe River as a trail corridor.

Table 4.17-4: Project Consistency with Transportation Policies of San José General Plan		
Policy	**Description**	**Project Consistency**
Air Transportation		
IE-4.2	Continue developing a world-class airport and build national and international connections by attracting new air service to it.	**Consistent:** An objective of the Project itself is the continued development of the Airport to accommodate the demand for air transportation services.
IE-4.3	Support development of a transit link connecting the Mineta San José International Airport with light rail transit, Caltrain, and future BART.	**Consistent:** The Airport partners with VTA in the funding of a bus route that connects the Airport with nearby LRT, Caltrain, and planned BART stations. The improvements contained in the Project would accommodate a future rail link between the Airport and LRT, Caltrain, and planned BART.
IE-4.5	Continue implementation of improvements to Mineta San José International airport facilities pursuant to the Airport Master Plan to maintain and expand regional, trans-continental, and international Airport operations.	**Consistent:** An objective of the Project itself is the continued development of the Airport to accommodate the demand for regional, trans-continental, and international air transportation services.
IE-4.9	Pursue implementation of a people-mover that serves terminals at the Mineta San José International Airport and provides convenient connection to light rail and future BART transit systems.	**Consistent:** In 2003, the Airport prepared an EIR for a people-mover to connect the Airport to LRT, Caltrain, and future BART. Partial funding for a people-mover or an alternate transit link was identified in Measure A.[179] All of the improvements contained in the Project would accommodate such a system.
TR-13.1	Promote airline service which meets the present and future air transportation needs of residents and the business community, and which minimizes impacts on the surrounding community.	**Consistent:** A key objective of the Project itself is the continued development of the Airport to accommodate the existing and projected demand for air transportation services.
TR-13.2	Implement capital improvements to Mineta San José International Airport as identified in its Airport Master Plan.	**Consistent:** The Project itself is an amendment to the Airport Master Plan for the purpose of the continued development of the Airport to accommodate the existing and projected demand for air transportation services.
TR-13.3	Develop and encourage improved ground access connections between the Mineta International Airport and area freeways and public transit and rail systems	**Consistent:** Since the mid-1990s, the City & the Airport have participated in the construction of roadway and transit upgrades to improve access to the Airport. The City is continuing to work with Caltrans and VTA on other proposed access improvement projects.[180]

[179] On November 7, 2000, the voters of Santa Clara County approved Measure A, which raised the County's sales tax by one-half of one percent for a period of 30 years commencing in 2006. Measure A revenues are administered by VTA and are designated for transit improvements. One of the transit projects identified in Measure A is a rail link between the Airport and either the Santa Clara BART Station or the LRT system on North First Street.

[180] The City partnered with Caltrans and VTA on the SR 87 Freeway Project and the I-880/Coleman Avenue Interchange Reconstruction Project. The City also constructed grade separations at the Airport on Airport Boulevard and Terminal Drive. The City is currently working with Caltrans and VTA on the US 101/Trimble Road Interchange Reconstruction Project, the Southbound US 101-to-SR-87 Connector Widening, the US 101 Express Lanes Project,

Table 4.17-4: Project Consistency with Transportation Policies of San José General Plan		
Policy	**Description**	**Project Consistency**
Ground Transportation		
TR-1.2	Consider impacts on overall mobility and all travel modes when evaluating transportation impacts of new developments or infrastructure projects.	**Consistent:** The Project itself is designed to improve air transportation, an important travel mode. Major ground access improvement projects have been constructed and additional projects are planned; see discussion of Policy TR-13.3, above. Future improvements will comply with the City's *Complete Streets Policy*, which states that roadway improvements should consider all modes (vehicles, transit, bicyclists, pedestrians), as applicable.
TR-2.2	Provide a continuous pedestrian and bicycle system to enhance connectivity throughout the City by completing missing segments. Eliminate or minimize physical obstacles and barriers that impede pedestrian and bicycle movement on City streets. Include consideration of grade-separated crossings at railroad tracks and freeways. Provide safe bicycle and pedestrian connections to all facilities regularly accessed by the public, including the Mineta San José International Airport.	**Consistent:** The Airport has added bicycle and pedestrian facilities as new construction occurs and demand warrants; see Section 4.17.1.2 for further discussion. Future facilities will include bicycle and pedestrian facilities where appropriate.
TR-2.5	Integrate the financing, design and construction of pedestrian and bicycle facilities with street projects. Build pedestrian and bicycle improvements at the same time as improvements for vehicular circulation.	N/A: The Project does not include the construction of new public streets.

For the following reasons, the Project would not conflict with the *San José Bike Plan 2020:*

- The bike lanes on Ewert Road have been constructed.
- The trail along the Guadalupe River has been constructed and has an at-grade crossing of Airport Boulevard that connects the Airport to the trail.
- The Project does not include work adjacent to Airport Boulevard that would preclude the City from constructing a future bike path to Coleman Avenue from the Guadalupe River Trail.
- The Project does not include off-Airport improvements on Coleman Avenue, De La Cruz Boulevard, Skyport Drive, or Airport Parkway that would preclude the future construction of bike lanes on those facilities.

As described in Section 4.17.1.1, *San José Transportation Analysis Policy 5-1* sets forth the requirements for the analysis of projects as to both CEQA and non-CEQA transportation impacts. This

and the US 101/4th/Zanker/Skyport Improvement Project. The City is a partner in the BART extension to downtown San Jose and Santa Clara. In July 2019, the City issued a Request for Interest (RFI) for the study of a new transit link between the Airport and Downtown San Jose's Diridon Multimodal Station.

transportation section of the EIR presents the findings of that analysis, which was completed per the requirements of Policy 5-1. The construction of the proposed Project would, therefore, be consistent with this policy.

Based upon the above analysis, the Project would not conflict with a plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle lanes and pedestrian paths. **(Less Than Significant Impact)**

4.17.2.2 *Conflicts with CEQA Guidelines Section 15064.3 (b)*

Impact TRN-2:	**The Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). (Less Than Significant Impact)**

VMT Analysis

The updated CEQA Guidelines (2019) include language consistent with SB 743, which became law in 2013.[181] Section 15064.3(b)(2) of the CEQA Guidelines states that transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less than significant transportation impact.

For the reasons described in Section 4.17.1.2 and in Appendix K, VMT/Airport User was developed as the appropriate metric to be used to determine the VMT impacts of the Project in accordance with the City's Transportation Analysis Handbook. The CSJ Model, described previously, calculated the total VMT for the Airport under existing/2018 conditions as well as under Project/2037 conditions. This calculation included all types of Airport-related trips: passengers, employees, air cargo, general aviation, etc.

The CSJ model was used to forecast future traffic volumes associated with the Project. The land use data for the Airport TAZs were updated to reflect horizon year 2037 Project conditions. The annual number of air passengers is projected to increase by 52%, from 14.8 million in 2018 and to 22.5 million in 2037. It was assumed that the 52% increase in air passengers would also result in an increase of 52% of Airport jobs to serve the growth in passenger activity at the airport. For the areas outside the Airport, the City of San José's 2040 General Plan land use assumptions were used. Major transportation improvement projects such as the Phase II BART Extension to Santa Clara, the conversion of two-person HOV lanes to Express Lanes on the freeways and the Caltrain electrification project were assumed to be operational by 2037.

Year 2037 travel forecasts were developed with the CSJ model to predict vehicular traffic, transit ridership, intersection turning movements at the study intersections, and daily traffic volumes on roadways in the vicinity of the airport. In addition, daily VMT was calculated for the trips associated with airport travel.

[181] SB 743 requires jurisdictions to stop using congestion and delay metrics as the measurement for CEQA impacts in a transportation analysis. By July 2020, all public agencies are required to base the determination of transportation impacts under CEQA on VMT.

Table 4.17-5 compares VMT/passenger under Project/2037 conditions to the VMT/passenger under existing/2018 conditions. The comparison shows that there would be a slight decrease in VMT/passenger in 2037 as compared to VMT/passenger in 2018.

Table 4.17-5: Comparison of Airport-Related Vehicle Miles Traveled

	Existing/Baseline (Year 2018) Conditions	Project (Year 2037) Conditions
Annual Passengers	14,800,000	22,500,000
Number of Daily Passengers [Assume 365 Days]	40,548	61,644
Daily Vehicle Trips [Modeled]	56,055	84,883
Daily VMT	755,742	1,136,790
Daily VMT per Passenger	18.64	18.44

Source: Hexagon Transportation Consultants, 2019.

The reduced trip length for Airport users in the future is consistent with the goals of the *Envision San José 2040 General Plan* to focus future development in centralized, already developed areas rather, than on the outskirts of the City. The Airport primarily serves the local market of San José and nearby cities since there are also airports in San Francisco and Oakland to serve other Bay Area travelers. The reason the Airport is predicting an increase in air travel is because of the expected growth in households and jobs in the South Bay. Because that growth will be relatively closer to the Airport in the future than it is today, the average trip lengths are expected to be reduced.

Based on the results of this analysis, the VMT impacts of the Project would be less-than-significant. **(Less Than Significant Impact)**

4.17.2.3 *Increase in Hazards due to Design Features or Incompatible Uses*

Impact TRN-3: The Project would not substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). (No Impact)

The improvements to the airfield that are part of the Project are being proposed and designed in accordance with the latest FAA design standards, with the objective of improving operational efficiency and safety. For ground transportation, Project-related improvements will be limited to on-Airport locations where roadways and intersections will be modified to accommodate the proposed parking garages, terminal expansion, hotel, and other new/modified facilities. Such improvements will comply with the City's current design standards and will comply with the City's Complete Streets Policy, which requires the accommodation of transit, bicyclists, and pedestrians.

Based on the above discussion, it is concluded that the Project does not include any substandard geometric design features or incompatible uses that might result in a substantial increase in hazards. **(No Impact)**

4.17.2.4 *Emergency Access Impacts*

Impact TRN-4:	**The Project would not result in inadequate emergency access. (No Impact)**

For the following reasons, the proposed Project will not impair or sever emergency access to the Airport:

- As described in Section 4.15, *Public Services*, the Airport Division of the San José Police Department is located at the Airport and Station 20 of the San José Fire Department, which includes the Aircraft Rescue & Fire Fighting (ARFF) team, is located at the Airport. These personnel are the primary providers of emergency police, fire, and medical services to the Airport. None of the improvements contemplated by the Project will change the on-Airport routes used by emergency responders or increase their response times.
- For those situations where on-Airport police, fire, and medical emergency services are supplemented by off-Airport personnel, the Project does not propose any roadway closures or roadway modifications that will increase response times to the Airport. **(No Impact)**

4.17.2.5 *Cumulative Impacts*

Impact TRN-C:	**The Project would not result in a cumulatively considerable contribution to a significant transportation impact. (Less Than Significant Cumulative Impact)**

The City's Transportation Analysis Handbook states that an evaluation of cumulative transportation impacts should take a project's long-term effects on VMT into account. In addition, a cumulative analysis should address a transportation project's consistency with the *Envision San José 2040 General Plan*, as well as its potential to increase land development in outlying areas, thereby increasing trip lengths and VMT.

For the following reasons, the Project would not result in a cumulatively considerable contribution to a significant transportation impact:

- As shown in Table 4.17-5, when compared to existing/2018 conditions, the Project would not result in an increase in long-term (year 2037) VMT.
- As discussed previously in Section 4.17.2.1, the Project is consistent with the transportation policies of the *Envision San José 2040 General Plan*.
- In furtherance of the goals of the City's General Plan, the Project is limited to improvements at the existing Airport to accommodate the demand for air transportation services. The Project does not include any changes to the density or location of land uses in San José, such changes that could open new areas for development and might result in increased VMT.
- As compared to an airport located in an outlying area, the Airport's location in a central area of San José, including its proximity to Downtown, is beneficial with regard to VMT.

4.17.3 Non-CEQA Transportation Issues – Local Transportation Analysis

As described in Section 4.17.1, San José Transportation Policy 5.1 requires preparation of a Local Transportation Analysis (LTA) to analyze non-CEQA transportation issues, including local transportation operations, intersection level of service, site access and circulation, and neighborhood transportation issues such as pedestrian and bicycle access, and recommend needed transportation improvements. Although the conclusions reached in the LTA are not impacts under CEQA, the LTA is presented here to provide information to the reader, consistent with the primary function of an EIR as an informational document.

It is recognized that the City of Santa Clara, Santa Clara County Roads & Airports Department, and VTA's CMP continue to use LOS for CEQA for their actions as lead agencies. However, the City of San José as lead agency for this EIR has the discretion under the SB 743-related CEQA Guidelines amendments that took effect in December 2018 to evaluate LOS outside of CEQA. Stated another way, San José is not obligated to use LOS to evaluate Santa Clara or CMP intersections or freeway segments for purposes of disclosing environmental impacts. Therefore, discussion of LOS conditions in this LTA is being done outside of the framework of CEQA, despite other agencies continuing to use LOS in their own CEQA documents.

4.17.3.1 *Intersection Levels of Service*

Methodology and Scenarios Analyzed

An intersection level of service (LOS) analysis was undertaken for the weekday AM and PM peak-hours at 13 study intersections located in the vicinity of the Airport. The intersections are shown on Figure 4.17-1. LOS is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays. The correlation between average control delay and LOS at signalized intersections is shown in Table 4.17-6.[182]. LOS was calculated and evaluated for the following scenarios:

Existing/Baseline Conditions

Existing traffic volumes at were based on traffic counts conducted in November 2018.

Background/No Project and Background/With Project Conditions

Traffic from nearby approved projects that have not been completed was added to existing/2018 volumes to yield "No Project/Background" volumes. Background trips include Phase 1 of growth in North San José per the North San José Area Development Policy (NSJADP). The background road network includes planned improvements to the U.S. 101/Trimble Road interchange. The "With Project/Background" scenario adds in the traffic associated with the projected growth in activity levels at the Airport by year 2037. The comparison between the "No Project/Background" scenario and the

[182] For greater detail on the LOS calculations and methodology, please see Appendix K.

Table 4.17-6: Signalized Intersection Level of Service Definitions Based on Control Delay		
Level of Service	**Description**	**Average Control Delay per Vehicle (sec.)**
A	Operations with very low delay occurring with favorable progression and/or short cycle lengths.	up to 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delays indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	55.1 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	Greater than 80.0
Sources: Transportation Research Board, *2000 Highway Capacity Manual* and VTA, *Traffic Level of Service Analysis Guidelines*		

"Background/With Project" scenario is provided to answer the question of "how will growth in activity levels at the Airport between 2018 and 2037 affect the operation of the 13 study intersections assuming no non-Airport growth occurs?"

Cumulative/No Project and Cumulative/With Project Conditions:[183]

The "Cumulative/No Project" traffic scenario reflects total projected traffic volumes on the roadway network in year 2037, excluding the increased traffic due to growth at the Airport between 2018 and 2037. The "Cumulative/No Project" scenario accounts for all planned non-Airport growth. The planned roadway network includes the Zanker Road connection to Fourth Street and improvements to the U.S. 101/Trimble Road interchange. The 2037 land use data include buildout of the NSJADP. The "Cumulative/With Project" scenario adds in the traffic associated with the projected growth in activity levels at the Airport by year 2037. The comparison between the "No Project/Cumulative" scenario and the "With Project/Cumulative" scenario is provided to answer the question of "how will growth in activity levels at the Airport between 2018 and 2037 in combination with planned non-Airport growth between 2018 and 2037 affect the operation of the four study intersections in Santa Clara taking into account the non-Airport growth that will occur in accordance with the adopted general plans of local cities?"

[183] The cumulative analysis is only for intersections in Santa Clara. Per San Jose's Transportation Analysis Handbook, a cumulative LOS analysis is not required in an LTA.

Criteria for Determining Substantial Contribution to Delay at Intersections

According to the policies of both San José and Santa Clara, an adverse effect on intersection operations occurs if for either peak hour:

- The level of service at the intersection degrades from an acceptable level (LOS D or better) under background conditions to an unacceptable level under background plus project conditions, or
- The level of service at the intersection is an unacceptable level (LOS E or F) under background conditions and the addition of project trips cause both the critical-movement delay at the intersection to increase by four or more seconds and the volume-to-capacity ratio (V/C) to increase by one percent (.01) or more.

The exception to this threshold is when the addition of project traffic reduces the amount of average control delay for critical movements, i.e., the change in average control delay for critical movements are negative. In this case, the threshold is when the project increases the critical v/c value by 0.01 or more.

For CMP intersections, an adverse effect on intersection operations occurs if for either peak hour:

- The level of service at the intersection degrades from an acceptable level (LOS E or better) under background conditions to an unacceptable level under background plus project conditions, or
- The level of service at the intersection is an unacceptable level (LOS F) under background conditions and the addition of project trips cause both the critical-movement delay at the intersection to increase by four or more seconds and the volume-to-capacity ratio (V/C) to increase by one percent (.01) or more.

Intersection LOS Results

Table 4.17-7 provides the results of the LOS analysis at the 13 study intersections under the scenarios described above. The data show that the traffic associated with the growth in Airport activity levels between 2018 and 2037 will affect the operation of the following intersections in excess of the above-described criteria:

- Central Expressway at De La Cruz Boulevard
- De La Cruz Boulevard at Martin Avenue
- Coleman Avenue at Brokaw Road
- North First Street at Brokaw Road

Table 4.17-7: Comparison of Intersection LOS at the Study Intersections

				Background Conditions						Cumulative Conditions					
		Existing (2018)		No Project		With Project				No Project		With Project			
Intersection	Peak Hour	Avg Delay (sec)	LOS	Avg Delay (sec)	LOS	Avg Delay (sec)	LOS	Incr. in Critical Delay (sec)	Incr. in Critical V/C	Avg Delay (sec)	LOS	Avg Delay (sec)	LOS	Incr. in Critical Delay (sec)	Incr. in Critical V/C
De La Cruz Blvd/ Central Expressway*	AM	41.7	D	52.4	D-	53.6	D-	1.8	0.032	126.8	F	**132.8**	**F**	**9.2**	**0.032**
	PM	82.5	F	129.6	F	**141.3**	**F**	**17.3**	**0.041**	431.8	F	**440.6**	**F**	**10.1**	**0.029**
De La Cruz Blvd/ Martin Avenue	AM	30.1	C	29.7	C	33.4	C-	4.9	0.051	122.0	F	**134.6**	**F**	**13.9**	**0.035**
	PM	32.9	C-	33.3	C-	34.0	C-	0.0	0.004	115.3	F	116.4	F	1.3	0.004
De La Cruz Blvd/ Reed Street	AM	11.2	B+	11.3	B+	11.7	B+	0.2	0.006	15.3	B	15.7	B	0.1	0.001
	PM	18.8	B-	18.9	B-	19.5	B-	0.7	0.011	23.6	C	24.0	C	0.5	0.006
Coleman Avenue/ Brokaw Road	AM	26.9	C	26.4	C	26.9	C	0.1	0.013	34.3	C-	35.2	D+	0.4	0.013
	PM	84.5	F	91.0	F	**97.8**	**F**	**9.4**	**0.028**	144.9	F	**152.4**	**F**	**12.0**	**0.028**
US 101 NB Off-Ramp/ Brokaw Road*	AM	31.1	C	35.4	D+	36.9	D+	1.9	0.058	Per San José's Transportation Analysis Handbook (2018), a cumulative LOS analysis is not required in a LTA for intersections located in San José.					
	PM	20.7	C+	23.4	C	23.7	C	-0.4	0.024						
N First Street/ Brokaw Road*	AM	37.8	D+	43.6	D	44.2	D	1.3	0.011						
	PM	40.8	D	52.2	D-	**63.3**	**E**	**19.5**	**0.070**						
US 101 SB Off-Ramp/ Brokaw Road	AM	45.5	D	47.4	D	51.5	D-	4.4	0.119						
	PM	34.0	C-	35.4	D+	34.6	C-	1.6	0.044						
Technology Drive/ Airport Parkway	AM	28.1	C	28.7	C	28.4	C	-0.7	0.072						
	PM	35.7	D+	36.4	D+	36.3	D+	1.4	0.056						
N First Street/ Skyport Drive	AM	26.3	C	27.2	C	27.0	C	0.2	0.035						
	PM	29.9	C	46.2	D	50.7	D	5.8	0.026						
SR 87 Ramps/ Skyport Drive	AM	17.7	B	21.7	C+	25.7	C	8.6	0.104						
	PM	15.6	B	15.9	B	19.5	B-	4.5	0.100						
Coleman Avenue/ Airport Boulevard	AM	12.5	B	12.7	B	18.4	B-	5.9	0.044						
	PM	19.5	B-	18.9	B-	24.4	C	4.3	0.034						
I-880 SB Off-Ramp/ Coleman Avenue*	AM	22.5	C+	32.6	C-	41.9	D	11.9	0.059						
	PM	19.1	B-	21.0	C+	22.4	C+	1.6	0.037						
I-880 NB Off-Ramp/ Coleman Avenue*	AM	33.3	C-	39.8	D	46.5	D	8.5	0.055						
	PM	25.5	C	28.3	C	31.2	C	2.8	0.056						

*Denotes CMP-designated intersection

Background/No Project is 2018 traffic + traffic from approved-but-not-yet-constructed projects

Background/With Project is 2018 traffic + traffic from approved-but-not-yet-constructed projects + the growth in Airport-related traffic between 2018 and 2037.

Cumulative/No Project is 2037 traffic excluding the growth in Airport-related traffic between 2018 and 2037.

Cumulative/With Project is 2037 traffic including the growth in Airport-related traffic between 2018 and 2037.

Bold/Red denotes Project-generated traffic results in exceedance of LOS criterion (i.e., Non-CEQA issue)

Source: Hexagon Transportation Consultants, 2019.

Measures to Offset the Project's Increase in Delay on Intersection Operations

Central Expressway at De La Cruz Boulevard

This intersection is controlled by the Santa Clara County Roads and Airports Department. The Comprehensive County Expressway Planning Study identifies the conversion of HOV to mixed-flow lanes on Central Expressway as a Tier 1A project. The City Place development in Santa Clara also identifies adding a second southbound right-turn lane and a third northbound left-turn lane as a mitigation measure. With implementation of these improvements, the intersection would operate at an unacceptable LOS F during the PM peak hour, but the average delay would be better than background conditions. It is assumed that City Place, in conjunction with Santa Clara County, will implement this improvement.

De La Cruz Boulevard at Martin Avenue

To improve operations, a second eastbound-to-northbound left-turn lane could be added to Martin Avenue. This improvement can be achieved by restriping the eastbound lane configuration to add an additional left-turn lane. With the implementation of this improvement, the intersection would operate at LOS C during the AM peak hour under Background/With Project conditions. This measure does not require Martin Avenue to be widened.

Coleman Avenue at Brokaw Road

The recommended improvement is to add a third southbound through lane on Coleman Avenue by ~~removing the pork chop island,~~ squaring off the corner, and restriping to provide exclusive southbound through and right turn lanes. In addition, it would be necessary to restripe the east and west legs of the intersection to provide exclusive right turn lanes. ~~This would require modifications to the signal phasing.~~ With implementation of these improvements, the intersection would operate at an acceptable LOS C during the PM peak hour under Background/With Project conditions. These improvements do not require Brokaw Road to be widened. However, to accommodate future bike lanes, Brokaw Road would need to be widened by 10 feet. This improvement already has been conditioned on approved projects in Santa Clara.

North First Street at Brokaw Road

The City, VTA, and Caltrans are currently pursuing a project that would implement roadway improvements adjacent to the North First Street/Brokaw Road intersection. These improvements include the reconfiguration and consolidation of the northbound U.S. 101 ramps at First/Brokaw, a new overcrossing of U.S. 101 at Zanker Road/Fourth Street, and the extension of Skyport Drive from First to Fourth Streets. These improvements are intended to improve traffic operations in this area, including at the North First Street/Brokaw Road intersection.

4.17.3.2 *Freeway Levels of Service*

Methodology and Scenarios Analyzed

A freeway LOS analysis was undertaken for the weekday AM and PM peak-hours on freeway segments located in the vicinity of the Airport. The freeway segments are shown on Figure 4.17-1. As prescribed in the CMP technical guidelines, the LOS for freeway segments is estimated based on vehicle density.

The vehicle density on a segment is correlated to level of service as shown in Table 4.17-8. The CMP requires that mixed-flow lanes and auxiliary lanes be analyzed separately from high-occupancy vehicle (HOV) lanes (otherwise known as carpool lanes). The CMP defines an acceptable LOS for freeway segments as LOS E or better.

Table 4.17-8: Freeway Segment Level of Service Definitions Based on Density

Level of Service	Description	Density (vehicles/mile/lane)
A	Average operating speeds at the free-flow speed generally prevail. Vehicles are almost completely unimpeded in the ability to maneuver within the traffic stream.	0 - 11
B	Speeds at the free-flow speed are generally maintained. The ability to maneuver within the traffic stream is only slightly restricted and the general level of physical and psychological comfort provided to drivers is still high.	11 - 18
C	Speeds at or near the free-flow speed of the freeway prevail. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more vigilance on the part of the driver.	18 - 26
D	Speeds begin to decline slightly with increased flows at this level. Freedom to maneuver within the traffic stream is more noticeably limited and the driver experiences reduced physical and psychological comfort levels.	26 - 46
E	At this level, the freeway operates at or near capacity. Operations in this level are volatile because there are virtually no usable gaps in the traffic stream, leaving little room to maneuver within the traffic stream.	46 - 58
F	Vehicular flow breakdown occurs. Large queues form behind breakdown points.	> 58

Sources: Transportation Research Board, *2000 Highway Capacity Manual* and VTA, *Traffic Level of Service Analysis Guidelines*

Criteria for Determining a Substantial Contribution to Delay on Freeways

A project is said to create an adverse effect on traffic conditions on a CMP freeway segment if for either peak hour:

- The LOS on the freeway segment degrades from an acceptable LOS E or better under existing conditions to an unacceptable LOS F under existing plus project conditions, or
- The LOS on the freeway segment is an unacceptable LOS F under existing conditions and the number of project trips on that segment constitutes at least one percent of capacity on that segment.

Freeway LOS Results

Table 4.17-9 provides the results of the LOS analysis for the freeway study segments. The data show that the traffic associated with the growth in Airport activity levels between 2018 and 2037 will substantially contribute to delay on the following freeway segments in excess of the above-described criteria:

Table 4.17-9: Effects of the Project on Freeway LOS

		Existing Conditions (Mixed Flow Lanes)						Project Conditions	
Freeway Segment	**Peak Hour**	**Avg Speed (mph)**	**# of Lanes**	**Capacity**	**Density (pc/mi/ln)**	**Volume**	**LOS**	**Project Trips**	**Percent of Capacity**
NB US 101: SR 87 On-Ramp to Trimble Rd Off-Ramp	AM PM	8 63	3 3	6,900 6,900	87.4 24.0	2,112 4,551	F C	**161** 125	**2.33%** 1.81%
NB US 101: I-880 On-Ramp to Old Bayshore Hwy On-Ramp	AM PM	10 61	4 4	9,200 9,200	84.2 28.9	3,256 7,000	F D	**100** 94	**1.09%** 1.02%
SB US 101: 4th St On-Ramp to I-880 Off-Ramp	AM PM	57 9	4 4	9,200 9,200	33.4 86.4	7,620 2,944	D F	97 75	1.05% 0.82%
SB US 101: Trimble Rd On-Ramp to SR 87 Off-Ramp	AM PM	51 28	3 3	6,900 6,900	38.8 58.6	5,964 4,932	D F	168 **157**	2.43% **2.28%**
NB I-880: The Alameda On-Ramp to Coleman Ave Off-Ramp	AM PM	14 8	3 3	6,900 6,900	75.9 86.8	3,291 2,175	F F	**134** **126**	**1.94%** **1.83%**
NB I-880: Coleman Ave On-Ramp to 1st St Off-Ramp	AM PM	17 15	3 3	6,900 6,900	72.7 75.2	3,603 3,360	F F	43 33	0.62% 0.48%
SB I-880: 1st St On-Ramp to Coleman Ave Off-Ramp	AM PM	39 21	3 3	6,900 6,900	48.3 66.9	5,706 4,173	E F	45 42	0.65% 0.61%
SB I-880: Coleman Ave On-Ramp to The Alameda Off-Ramp	AM PM	56 26	3 3	6,900 6,900	34.2 61.0	5,772 4,719	D F	121 **100**	1.75% **1.45%**
NB SR 87: Skyport Dr On-Ramp to US 101 Off-Ramp	AM PM	12 57	2 2	4,400 4,400	79.3 33.3	1,960 3,800	F D	**253** 196	**5.75%** 4.45%
SB SR 87: US 101 On-Ramp to Skyport Dr Off-Ramp	AM PM	52 38	2 2	4,400 4,400	37.8 49.2	3.964 3,770	D E	262 246	5.95% 5.59%

NB = northbound SB = southbound

pc/mi/ln = passenger cars per mile per lane

Bold/Red denotes Project-generated traffic results in exceedance of LOS criterion (i.e., Non-CEQA effect)

Source: Hexagon Transportation Consultants, 2019.

- Northbound U.S. 101, from SR 87 to Trimble Road – AM Peak-Hour
- Northbound U.S. 101, from I-880 to Old Bayshore Highway – AM Peak-Hour
- Southbound U.S. 101, from Trimble Road to I-880 – PM Peak-Hour
- Northbound I-880, from The Alameda to Coleman Avenue – AM Peak-Hour
- Northbound I-880, from The Alameda to Coleman Avenue – PM Peak-Hour
- Southbound I-880, from Coleman Avenue to The Alameda – PM Peak-Hour
- Northbound SR 87, from Skyport Drive to US 101 – AM Peak-Hour

4.17.3.3 *Pedestrian, Bicycle, and Transit Analysis*

It is the goal of the *Envision San José 2040 General* Plan that all projects accommodate and encourage the use of non-automobile transportation modes to achieve San José's mobility goals and reduce vehicle trip generation and vehicle miles traveled. In addition, the adopted City's *Bicycle Plan 2020*

establishes goals, policies and actions to make bicycling a daily part of life in San José. It includes designated bike lanes along City streets and corridors. For the City as a whole, the City's General Plan identifies both walk and bicycle commute mode split targets as 15 percent or more for the year 2040.

Pedestrian Facilities

As described in Section 4.17.1.2, pedestrian access to the Airport is limited, given that airports are regional-serving facilities. There is a designated crosswalk with pedestrian-activated signals on Airport Boulevard that links Airport Parkway and the Guadalupe River Trail to the passenger terminals. In addition, there is free public bus service, partially funded by the Airport, that provides several boarding/deboarding stops at the Airport and along the local street network between the Airport, the VTA light rail station at North First Street/Metro Drive, and the Santa Clara Caltrain/future BART station. Airport facilities fronting directly on a public roadway all have sidewalks. As Airport activity levels continue to increase in the future, the City will continue to implement improvements, both on- and off-Airport, that could enhance safe and efficient pedestrian access to Airport facilities. The following pedestrian improvements should be considered:

- Create a direct pedestrian and bicycle connection from Skyport Drive to the terminals.
- Provide a continuous sidewalk on Airport Boulevard.
- Create a pedestrian connection from the long-term parking lot to Terminal A.
- Add sidewalks to Ewert Road.
- Provide continuous sidewalks on Coleman Avenue, Brokaw Road, and Martin Avenue. Some of the road segments without sidewalks are in Santa Clara, so this would require coordination with Santa Clara.

Bicycle Facilities

The Project will increase the demand for bicycle access to the Airport. The Guadalupe River Trail, a key element of the City of San José's bicycle network with numerous connections to other designated bicycle routes, runs along the eastern side of Airport property immediately adjacent to Airport Boulevard. Access to Airport facilities, most notably the passenger terminal area, is provided across Airport Boulevard at the pedestrian crosswalk mentioned above. The City should consider adding a bicycle connection to Terminal B from Skyport Drive.

To get to the facilities on the west side of the Airport, there are bike lanes on a portion of Coleman Avenue. It would be desirable to have bike lanes on the full length of Coleman Avenue and on De La Cruz Boulevard. Most of the sections without bike lanes are in Santa Clara. San José should consider working with Santa Clara to see if bike lanes can be added.

The Airport is currently installing two sets of bicycle lockers in the terminal area for public use, one in the Terminal A baggage claim facility and one in Hourly Parking Lot 3 directly opposite Terminal B. Bicycle parking for employees at the Airport is also provided within individual facilities. As Airport activity levels continue to increase in the future, the Airport and the City will monitor use of the public bicycle lockers and provide additional bike parking if necessary.

Transit Services

The Airport is well-served by transit with Route 60 providing free service connecting to Caltrain and light rail transit (LRT). Route 60 operates along Coleman Avenue and Airport Boulevard in the project study area, with approximately 15-minute headways from 7:00 AM to 7:00 PM during the weekdays and approximately 30-minute headways on the weekends. The combination of the Caltrain, LRT, and Route 60 services provides good connections to most areas in the South Bay. In addition, the BART system is being extended to Downtown San José and the Santa Clara Caltrain Station, with service currently estimated to commence in 2026.[184] However, there is currently no direct transit connection from Downtown San José to the San José Airport. The use of LRT plus Route 60 is a circuitous connection. In July 2019, the City's Department of Transportation issued a Request for Interest (RFI) for a study to determine the feasibility of constructing a direct transit connection between the Diridon Station in Downtown San José and the Airport.

[184] Source: City of San Jose, Department of Transportation. Available at: http://www.sanjoseca.gov/index.aspx?NID=6060, accessed August 24, 2019.

4.18 TRIBAL CULTURAL RESOURCES

The following discussion is based on the 1997 Airport EIR, published sources, and reports on file at the City of San José. Due to the sensitive information contained in the reports, they are on file with the Planning Division. The report can be viewed by qualified personnel during normal business hours.

4.18.1 Environmental Setting

4.18.1.1 *Regulatory Framework*

Assembly Bill 52 Tribal Cultural Resources

A tribal cultural resource can be a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe. It also must be either on or eligible for the California Historic Register, a local historic register, or the lead agency, at its discretion, chooses to treat the resource as a tribal cultural resource. Assembly Bill 52 (AB 52), which amended the Public Resources Code, requires lead agencies to participate in formal consultations with California Native American tribes during the CEQA process, if requested by any tribe, to identify tribal cultural resources that may be subject to significant impacts by a project. Where a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document must discuss the impact and whether feasible alternatives or mitigation measures could avoid or substantially lessen the impact. Consultation is required until the parties agree to measures to mitigate or avoid a significant effect on a tribal cultural resource or when it is concluded that mutual agreement cannot be reached.

Local

Envision San José 2040 General Plan

The General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned projects within the City. The policies listed in Table 4.18-1 are specific to cultural resources and are applicable to the proposed Project.

Table 4.18-1: General Plan Policies – Tribal Cultural Resources

Policy	Description
ER-10.2	Recognizing that Native American human remains may be encountered at unexpected locations, impose a requirement on all development permits and tentative subdivision maps that upon discovery during construction, development activity will cease until professional archaeological examination confirms whether the burial is human. If the remains are determined to be Native American, applicable state laws shall be enforced.
ER-10.3	Ensure that City, State, and Federal historic preservation laws, regulations, and codes are enforced, including laws related to archaeological and paleontological resources, to ensure the adequate protection of historic and pre-historic resources.

4.18.1.2 *Existing Conditions*

AB 52 requires lead agencies to conduct formal consultations with California Native American tribes during the CEQA process to identify tribal cultural resources that may be subject to significant impacts as a result of a project. Where a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document must discuss the impact and whether feasible alternatives or mitigation measures could avoid or substantially lessen the impact. This consultation requirement applies only if the tribes have sent written requests for notification of projects to the lead agency. The Ohlone Indian Tribe has requested to be notified of all City of San José projects. The City of San José notified the Ohlone Tribe of the Project in December 2018. To date, the Tribe has not initiated formal consultation.

According to the San José General Plan, Native American era fossils and artifacts have been discovered in various locations throughout San José. Due to its proximity of Guadalupe River, the project site is located within a potentially archaeologically sensitive area and is adjacent to a known historical Native American village.[185]

As discussed in Section 4.5, *Cultural Resources*, archival research, which was conducted at the Northwest Information Center of the California Archeological Site Inventory, revealed a number of previous archeological surveys conducted in the Airport vicinity. The existing research has identified two recorded archaeological sites that are known to exist at the Airport: SCL-311H and SCL-430.

Site SCL-311H is within the northwest portion of the Airport and stretches along what was once Mission Road (now called Trimble Road) from the Guadalupe River to North First Street. Research indicates that the site of the route was established in the 1770s as the original access to Mission Santa Clara, which was reported to lie on the east side of the Guadalupe River. In addition, the area may have contained the original adobe structures that housed inhabitants adjacent to the Mission.

Site SCL-430 is a site that has been recorded in the center of the southwest edge of the Airport. Survey of the site surface revealed both historic and pre-historic artifacts. Historic artifacts found dating from the mid-1800s included bottle fragments, ceramics, and metal objects, assumed to be related to turn-of-the-century residences that were removed for Airport expansion. In addition, the site was noted to be on the edge of the old location of the early Santa Clara Mission site. Pre-historic elements encountered included projectile points, three chipped lithics, six fire cracked rocks, and two pieces of possible groundstone within a 300-acre area. The projectile points appeared to be early Middle Horizon or Early Horizon in age (more than 2,000 years old). The area appeared to be associated with hunting/butchering activities.

The most useful previous survey was the detailed cultural resources assessment that was prepared as part of the preparation of the EIR for the 1980 Airport Master Plan. This assessment included extensive subsurface testing over the entire Airport site. A total of 237 test trenches were excavated to a maximum depth of 300 cm (approximately three feet). Only three trenches yielded findings of historic nature (cut bone, glass, and metal). None of the trenches yielded pre-historic resources. The 1980 assessment also identified archaeological sensitive areas at the Airport where the likelihood of

[185] City of San José. *Archaeological Sensitivity Map.*

encountering buried archaeological materials during the construction of future Airport-related projects is the greatest (see Figure 4.5-1).

Since 1980, pursuant to the 1980 Master Plan EIR, established Airport policy has required that a qualified archaeologist be present during all earthmoving activities for projects located in the designated archaeological sensitive areas. Major construction projects that have been undertaken at the Airport within these archaeological sensitive areas include the Runway 12R/30L extension, Runway 11/29 extension/widening, Taxiways W and L extensions, Taxiways M and V, Yellow Long-Term Parking Lot, Southwest Tiedown Ramp, storm and sanitary sewer lines, and Employee Parking Lot and perimeter road. During earthmoving activities associated with these projects, no archaeological resources were encountered.

4.18.2 Discussion of Impacts to Tribal Cultural Resources

For the purpose of determining the significance of the project's impacts on tribal cultural resources, a significant impact would occur if the project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

1) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)
2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying these criteria, the significance of the resource to a California Native American tribe shall be considered.

4.18.2.1 *Project Impacts*

Impact TCR-1:	**The Project would not cause a substantial adverse change in the significance of a tribal cultural resource that is 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). (Less Than Significant Impact)**

Consistent with AB 52 requirements, and per the request of the Ohlone Indian Tribe, the City sent notice of the Project to the Ohlone tribe. No response was received.

Previous Airport projects have not unearthed any tribal cultural resources, and no known tribal cultural resources are present on-the Airport. In the event that any tribal cultural resources are found during construction, development would be ceased and mitigation measures MM CUL-2.1 and MM CUL-3.1 would be followed. Implementation of these two mitigation measures would ensure no significant impact to tribal cultural resources occurs. **(Less Than Significant Impact)**

Impact TCR-2:	**The Project would not cause a substantial adverse change in the significance of a tribal cultural resource that is 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. (No Impact)**

As described above, no tribal cultural resources are known to be present within or adjacent to the project footprint. In the event any tribal cultural resources are found, implementation of MM CUL-2.1 and MM CUL-3.1 would ensure no adverse change is caused to a resource. Therefore, the Project would not impact tribal cultural resources. **(No Impact)**

4.18.2.2 *Cumulative Impacts*

Impact TCR-C:	**The Project would not result in a cumulatively considerable contribution to a significant tribal cultural resources impact. (No Cumulative Impact)**

As stated above, the Project would not impact any tribal cultural resources since none are present. In the event that a TCR is unearthed, implementation of mitigation measures MM CUL-2.1 and MM CUL-3.1 would ensure that no significant impact occurs. Therefore, there would be no cumulative impacts to tribal cultural resources. **(No Cumulative Impact)**

4.19 UTILITIES AND SERVICE SYSTEMS

4.19.1 Environmental Setting

4.19.1.1 *Regulatory Framework*

State and Regional

Urban Water Management Plan

Pursuant to California Water Code, water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet (approximately 980 million gallons) of water annually must prepare and adopt an urban water management plan (UWMP) and update it every five years. As part of a UWMP, water agencies are required to evaluate and describe their water resource supplies and projected needs over a 20-year planning horizon, water conservation, water service reliability, water recycling, opportunities for water transfers, and contingency plans for drought events. The San José Water Company adopted its most recent UWMP in April 2015.

Wastewater

The RWQCB includes regulatory requirements that each wastewater collection system agency shall, at a minimum, develop goals for the City's Sewer System Management Plan to provide adequate capacity to convey peak flows.

Assembly Bill 939 and Senate Bill 1016

The California Integrated Waste Management Act of 1989, or Assembly Bill 939 (AB 939), established the Integrated Waste Management Board, required the implementation of integrated waste management plans, and mandated that local jurisdictions divert at least 50 percent of solid waste generated (from 1990 levels), beginning January 1, 2000, and divert at least 75 percent by 2010. Projects that would have an adverse effect on waste diversion goals are required to include waste diversion mitigation measures.

Assembly Bill 341

Assembly Bill (AB) 341 sets forth the requirements of the statewide mandatory commercial recycling program in the Public Resources Code. All businesses that generate four or more cubic yards of garbage per week and multi-family dwellings with five or more units in California are required to recycle. AB 341 sets a statewide goal for 75% disposal reduction by the year 2020.

Senate Bill 1383

Senate Bill (SB) 1383 establishes targets to achieve a 50% reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75% reduction by 2025. The bill grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that not less than 20% of currently disposed edible food is recovered for human consumption by 2025.

California Green Building Standards Code

In January 2010, the State of California adopted the California Green Building Standards Code that establishes mandatory green building standards for all buildings in California. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and indoor environmental quality. These standards include a mandatory set of guidelines, as well as more rigorous voluntary measures, for new construction projects to achieve specific green building performance levels:

- Reducing indoor water use by 20%;
- Reducing wastewater by 20%;
- Recycling and/or salvaging 50% of nonhazardous construction and demolition debris; and
- Providing readily accessible areas for recycling by occupant.

Local

San José Zero Waste Strategic Plan/Green Vision/Climate Smart San José

The Green Vision provides a comprehensive approach to achieve sustainability through new technology and innovation. The Zero Waste Strategic Plan outlines policies to help the City foster a healthier community and achieve its Green Vision goals, including 75% diversion by 2013 and zero waste by 2022. The Green Vision also includes ambitious goals for economic growth, environmental sustainability, and an enhanced quality of life for San José residents and businesses. In February 2018, the Green Vision was replaced by Climate Smart San José.

San José Construction & Demolition Diversion Program

More than 30% of landfill waste is comprised of construction and demolition (C&D) debris. The City's Construction & Demolition Diversion (CDD) Program ensures that at least 75% of this waste is recovered and diverted from landfills.

Private Sector Green Building Policy

The City of San José's Green Building Policy for private sector new construction encourages building owners, architects, developers, and contractors to incorporate meaningful sustainable building goals early in building design process. This policy establishes baseline green building standards for private sector new construction and provides a framework for the implementation of these standards. It is also intended to enhance the public health, safety and welfare of San José residents, workers, and visitors by fostering practices in the design, construction, and maintenance of buildings that will minimize the use and waste of energy, water and other resources in the City of San José.

Envision San José 2040 General Plan includes policies for the purpose of avoiding or mitigating impacts resulting from planned development projects within the City. The policies listed in Table 4.19-1 are specific to utilities and service systems and are applicable to the proposed Project.

Table 4.19-1: General Plan Policies – Utilities and Services	
Policy	**Description**
MS-1.4	Foster awareness in San José's business and residential communities of the economic and environmental benefits of green building practices. Encourage design and construction of environmentally responsible commercial and residential buildings that are also operated and maintained to reduce waste, conserve water, and meet other environmental objectives.
MS-3.2	Promote use of green building technology or techniques that can help to reduce the depletion of the City's potable water supply as building codes permit.
MS-3.3	Promote the use of drought tolerant plants and landscaping materials for nonresidential and residential uses.
MS-19.1	Require new development to contribute to the cost-effective expansion of the recycled water system in proportion to the extent that it receives benefit from the development of a fiscally and environmentally sustainable local water supply.
IN-3.7	Design new projects to minimize potential damage due to stormwaters and flooding to the site and other properties.
EIN-3.9	Require developers to prepare drainage plans that define needed drainage improvements for proposed developments per City standards.
IN-1.5	Require new development to provide adequate facilities or pay its fair share of the cost for facilities needed to provide services to accommodate growth without adversely impacting current service levels.
IN-3.10	Incorporate appropriate stormwater treatment measures in development projects to achieve stormwater quality and quantity standards and objectives in compliance with the City's National Pollutant Discharge Elimination System (NPDES) permit
MS-19.4	Require the use of recycled water wherever feasible and cost-effective to serve existing and new development.

4.19.1.2 *Existing Conditions*

Water Services

San José Water (SJW) supplies water to the Airport. SJW has three sources of potable supply: local surface water from SJW's Santa Cruz Mountain sources, groundwater, and treated surface water from the Santa Clara Valley Water District's (Valley Water's) local and imported supplies.

Recycled water is treated and provided to the Airport by South Bay Water Recycling (SBWR). SBWR's recycled water system consists of over 150 miles of pipeline, five pump stations, and 10 million gallons of storage in reservoirs. The San José Airport uses recycled water for toilet flushing and landscaping, which consist of primarily native and drought tolerant plants to reduce water use.

In 2018, the Airport used an average of 129,500 gallons of water per day (gpd), which is equivalent to an annual use of 145.1 acre-feet of water.[186]

[186] San José Water. *Mineta San José International Airport Master Plan Amendment Water Supply Assessment*. June 2019.

Sanitary Sewer Collection/Wastewater Treatment

Wastewater from San José and surrounding communities is treated at the San José/Santa Clara Regional Wastewater Facility (Facility) which is administered and operated by the City's Department of Environmental Services. The Facility provides primary, secondary, and tertiary treatment of wastewater and has the capacity to treat 167 million gallons of wastewater a day (mgd). The Facility currently treats an average of 110 million gallons of wastewater per day and serves 1.4 million residents.[187] The Facility is currently operating under a 120 mgd dry weather effluent flow constraint. This requirement is based upon the SWRCB and the RWQCB concerns over the effects of additional freshwater discharges on the saltwater marsh habitat and pollutant loading to the Bay from the Facility. Approximately 10% of the plant's effluent is recycled for non-potable uses. The remainder is discharged into the Bay after treatment. The average daily dry weather flow treated by the Facility from sources in the City is approximately 69.8 mgd. The City's share of the Facility's treatment capacity is approximately 108.8 mgd, which based on current sewage flows, leaves the City with approximately 39 mgd remaining of the WPCP's rated capacity

The wastewater collection system at the Airport includes a 10-inch line that serves that east side of the Airport and a 10- and 12-inch line that serves the west side of the Airport. These lines merge north of the Airport into a 12-inch line that feeds into a 20- and 21-inch line in Trimble Road. The capacity of these lines is greater than 1.2 mgd. The current average dry weather flow (ADWF) in the two lines serving the Airport is 0.262 mgd and 0.109 mgd, which together total 0.371 mgd.[188]

Storm Drainage

The City owns and maintains the municipal stormwater drainage system which serves the Airport.

The Airport occupies approximately 1,050 acres, including a portion of the adjacent Guadalupe River. Approximately 60% of the Airport currently is covered with impervious surfaces. Surface drainage at the Airport is collected by a series of underground storm drains and pipelines that eventually discharge to the Guadalupe River through 16 outfalls. The Airport's storm drain system also serves off-Airport drainage from the west side of Coleman and Martin Avenues in the City of Santa Clara. A retention basin, known as Rocky Pond, and pump are located at the northern end of the Airport. The pump was originally installed to assist Airport drainage during high levels of flow in the river and is also used to dewater the Terminal A parking garage.

Solid Waste

Santa Clara County's Integrated Waste Management Plan (IWMP) was approved by the California Integrated Waste Management Board in 1996 and was reviewed in 2004 and 2007. Each jurisdiction in the county has a diversion requirement of 50% for 2000 and each year thereafter. According to the IWMP, the County has adequate disposal capacity beyond 2022. The total permitted landfill capacity of the five operating landfills in the City is approximately 5.3 million tons per year. In October 2007,

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[187] City of San José. "San José-Santa Clara Regional Wastewater Facility." Available at: http://www.sanjoseca.gov/?nid=1663. Accessed May 1, 2019.

[188] City of San José, Department of Public Works, *Sanitary Sewer Flow Monitoring, January –April 2018, City Manhole IDs 43087 and 43086, City of San José.*

the San José City Council adopted a Zero Waste Resolution which set a goal of 75% waste diversion by 2013 and zero waste by 2022.

As part of the City's Green Vision/Climate Smart San José, the Airport has a goal for Zero Waste by 2022. By implementing composting and recycling programs the Airport is currently diverting 85% of its waste from landfill trash. Airport environmental staff works closely with food concessions, tenants, and janitorial staff to improve waste management at the facility. After conducting a waste audit of concession kitchens, the Airport found that it can compost over 70% of what enters the waste stream. Environmental staff worked closely with concessions, training them to sort food and compostable waste from trash and recyclables. Compostable materials are taken to Z-Best, a nearby Industrial Composting facility, where they are transformed into nutrient rich compost and fertilizer. When Terminal B opened, receptacles were purchased and installed which improve the convenience and accessibility of recycling for passengers.[189] By implementing waste reduction measures, the Airport has reduced disposal costs and trash going to the landfill.

4.19.2 Discussion of Impacts to Utilities and Service Systems

For the purpose of determining the significance of the project's impacts on utilities and service systems, a significant impact would occur if the project would:

1) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects
2) Have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years
3) Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments, 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
4) Be noncompliant with federal, state, and local management and reduction statutes and regulations related to solid waste

4.19.2.1 *Utility Construction or Relocation Impacts*

Impact UTL-1:	**The Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which would cause significant environmental effects. (Less Than Significant Impact)**

[189] San Jose International Airport website, Available at: https://www.flysanjose.com/environment/resource-waste-management, Accessed August 12, 2019.

Water Service

Existing water lines are present at both sides of the Airport with capacity to serve the water demand of new development and the increase in air passenger, air cargo, and general aviation travel proposed by the Project. Lateral connections to the water lines would be installed as part of the hotel and other new structure construction. The proposed Airport Master Plan Amendment projects would not require construction or relocation of water lines resulting in environmental impacts beyond the construction impacts addressed in other sections of this EIR. **(Less Than Significant Impact)**

Wastewater Treatment

As described in Section 4.19.1.2, existing wastewater lines are present of both sides of the Airport with excess capacity to serve the wastewater generated by the increased activity levels at the Airport associated with the Project. These lines are operating at approximately 31% of their capacity and the increase in wastewater due to the Project would not result in an exceedance of capacity. Lateral connections to the wastewater lines would be installed as part of the hotel and other new facility construction. The proposed Airport Master Plan Amendment projects would not require construction or relocation of wastewater lines resulting in environmental impacts beyond the construction impacts addressed in other sections of this EIR. **(Less Than Significant Impact)**

Stormwater Drainage

As described in Section 4.10, *Hydrology and Water Quality*, the proposed Airport Master Plan Amendment projects would result in the increase in impervious surfaces of approximately 38 acres. Storm drain facilities will be included in the projects to ensure adequate drainage is provided. Construction of storm drain facilities would not result in environmental impacts beyond the construction impacts addressed in other sections of this EIR. **(Less Than Significant Impact)**

Other Utilities

Electric power, natural gas, and telecommunications facilities are present serving the existing Airport and are sufficient to serve buildout of the Master Plan projects. Minor expansions of service and connections to new Airport structures will be required, but no major utility upgrades are proposed or necessary to serve the Project. The proposed Airport Master Plan Amendment projects would not require construction or relocation of electric power, natural gas, or telecommunications facilities resulting in environmental impacts beyond the construction impacts addressed in other sections of this EIR. **(Less Than Significant Impact)**

4.19.2.2 *Water Supply Impacts*

Impact UTL-2:	**Sufficient water supplies are available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years. (Less Than Significant Impact)**

A water supply assessment was completed in June 2019 by SJW for the proposed Airport Master Plan Amendment. The assessment included the projected water demand of projected increases in air passengers, air cargo, and general aviation through 2037, as well as completion and operation of Master Plan airfield, air cargo, general aviation, aviation support, and Airport terminal projects including a

new 330 guest room business hotel. In 2037, projected water use at the Airport is estimated to be 196,900 gpd, which is equivalent to an annual use of about 220.6 acre-feet, which represents a 0.05% increase over SJW's pre-drought system-wide 2013 water production of 146,776 acre-feet. Furthermore, the Airport is located in one of SJW's highest producing groundwater zones and the distribution system has been engineered to be hydraulically redundant and can easily transport water from other pressure zones to supplement supply, if needed. Table 4.19-2 below summarizes the existing (2018) and Airport net potable water demand at buildout of the Project (2037).

Table 4.19-2: Total Airport Water Demand Estimated for Project

2018 Water Use (gpd)	2018 Water Use (AF/yr)	2037 Water Use (gpd)	2037 Water Use (AF/yr)	Net Project Demand (gpd)	Net Project Demand (AF/yr)
129,500	145.1	196,900	220.6	67,400	75.5

The Project's demand is consistent with SJW's 2015 Urban Water Management Plan, which anticipated a 12.3% increase in total system demand between actual 2013 demand and projected 2040 demand. Based upon this anticipated demand, SJW is able to meet the needs of the service area, including the Project, for average and single-dry years without the need for water use reductions. In the event of a multiple-dry year, the Project alone will not cause water shortages to occur, based on projections by SJW and Valley Water. Valley Water is pursuing water supply solutions to ensure that no more than 20% conservation will be required during any future drought, and SJW is committed to working with Valley Water to meet future demand and reduce future shortages. As described previously, the Airport uses recycled water for landscape irrigation and toilet flushing, which reduces the demands on potable supplies of SJW. Based on both the SJW and Valley Water Urban Water Management Plans, SJW has determined that there is sufficient water available to serve the Project and other foreseeable development during normal, dry and multiple dry years. **(Less Than Significant Impact)**

4.19.2.3 *Wastewater Treatment Impacts*

Impact UTL-3:	**The Project would not result in a determination by the wastewater treatment provider which serves or may serve the Project that it does not have adequate capacity to serve the Project's demand in addition to the provider's existing commitments. (Less Than Significant Impact)**

The adopted *Envision San José 2040 General Plan* would allow development that increases sewage generation throughout the City. Additional development allowed by the General Plan is estimated to generate average dry weather flow of approximately 30.8 mgd.[190] The proposed Airport Master Plan Amendment is projected to generate an average wastewater flow of 50,550 gpd, which equates to a 1.6

[190] City of San José, *Envision San José 2040 General Plan Integrated Final Program EIR*, September 2011.

percent increase in wastewater over General Plan buildout.[191] Additionally, as described in Sections 4.9, *Hazardous Materials*, and 4.10, *Hydrology*, wastewater from airplane tanks is pumped out and put into the City's wastewater systems for treatment, but it is not a large volume. With the Project, General Plan buildout is estimated to generate an average dry weather flow of 30.85 mgd. The City's share of the Facility's treatment capacity is approximately 108.8 mgd, which based on current sewage flows, leaves the City with approximately 39 mgd remaining of the Facility's rated capacity. Wastewater flows from General Plan buildout plus the Project, therefore, remains within the City's allocated Facility capacity.

Buildout of the combined San José and Santa Clara General Plan Updates is projected to increase the volume of wastewater that would need be treated at the Facility. Average year 2040 dry weather influent flows to the Facility are projected to range between 159 – 182 mgd, depending upon the level of water conservation.[192] With improvements included in the San José/Santa Clara Water Pollution Control Plant Master Plan, adopted by the San José City Council November 19, 2013, to correct select process deficiencies, the existing reliable capacity of the Facility's various treatment processes is generally sufficient to meet long-term (2040) projected flow increases.[193]

The development allowed under the San José and Santa Clara General Plans, with the proposed Project, would not exceed the wastewater treatment capacity of the Facility. The Facility would have adequate capacity to serve the Project's demand in addition the Facility's existing commitments. **(Less Than Significant Impact)**

4.19.2.4 *Solid Waste Impacts*

Impact UTL-4:	**The Project would not generate solid waste in excess of state or local standards or in excess of the capacity of local infrastructure. (No Impact)**

Impact UTL-5:	**The Project would not negatively impact the provision of solid waste services or impair the attainment of solid waste reduction goals. (No Impact)**

Impact UTL-6:	**The Project would not be noncompliant with federal, state, and local management and reduction statutes and regulations related to solid waste. (No Impact)**

Through Project construction and operation, the Airport would continue to work towards its goal for Zero Waste by 2022. The City's CDD Program ensures that at least 75% of construction and demolition debris is recovered and diverted from landfills.[194] By implementing composting and recycling programs the Airport is currently diverting 85% of its waste from landfill trash and would continue to

[191] Wastewater flow is estimated to represent 75% of the project water demand (67,400 gpd water X 0.75 = 50,550 gpd wastewater).
[192] City of San José, San Jose/Santa Clara Water Pollution Control Plant Master Plan, ESA/J&S, Draft EIR (SCH #201105274), January 2013.
[193] Ibid.
[194] City of San José, Construction and Demolition website, Available at: http://www.sanjoseca.gov/index.aspx?NID=1532. Accessed August 21, 2019.

divert waste through implementation of the Project. Through continued composting of food waste and increasing recycling for passengers, the Airport Master Plan improvements and projected increase in air passengers would not generate solid waste in excess of state or local standards, would not impair the attainment of solid waste reduction goals, and would be compliant with federal, state, and local reduction statutes related to solid waste. **(No Impact)**

4.19.2.5 *Cumulative Impacts*

Impact UTL-C:	**The Project would not result in a cumulatively considerable contribution to a significant utilities and service systems impact. (Less Than Significant Cumulative Impact)**

The Airport Master Plan improvements and projected increases in air passengers, air cargo, and general aviation will create an incremental increase in demand on existing utilities and services systems serving the Airport. Through implementing the construction methods, practices, and requirements of the Climate Smart San José program, the Airport will not result in a cumulatively considerable contribution to a significant utilities and service system impact. **(Less Than Significant Cumulative Impact)**

4.20 WILDFIRE

4.20.1 Environmental Setting

The Airport is located within an urban environment classified as a Non-Very High Fire Hazard Severity Zone and is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones.[195] The closest locations with risk of wildland fires are the rural and largely open space lands of the foothills of the Diablo Range, approximately five miles to the east.

4.20.2 Discussion of Wildfire Impacts

For the purpose of determining the significance of the project's wildfire impacts, and if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, a significant impact would occur if the project would:

1) Substantially impair an adopted emergency response plan or emergency evacuation plan
2) 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
3) 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
4) 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.

4.20.2.1 *Project Impacts*

The Airport is within an urban environment and is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones. Further, there are no aspects of the Project that would potentially exacerbate wildfire risks. Specifically, the Project does not include new high voltage power lines and/or the severing of existing access routes. Therefore, the Project would not result in any significant impacts related to wildfires. **(No Impact)**

4.20.2.2 *Cumulative Impacts*

As stated above, the Project would not result in adverse effects related to wildfires primarily because it is not located in or near an area where wildfire hazards are high. Similarly, any nearby project would have minimal impacts because the area itself is not classified as high risk for wildfires. Therefore, there would be no significant cumulative impact. **(No Cumulative Impact)**

[195] Sources: 1) State of California Department of Forestry and Fire Protection. *Santa Clara County Fire Hazard Severity Zones in SRA.* Adopted November 7, 2007. and 2) State of California Department of Forestry and Fire Protection. *San José City Very High Fire Hazard Severity Zones in LRA As Recommended by CAL FIRE.* Adopted October 8, 2008.

5.0 GROWTH-INDUCING IMPACTS

For the purposes of this project, a growth inducing impact is considered significant if the project would:

- Cumulatively exceed official regional or local population projections;
- Directly induce substantial growth or concentration of population. The determination of significance shall consider the following factors: the degree to which the project would cause growth (i.e., new housing or employment generators) or accelerate development in an undeveloped area that exceeds planned levels in local land use plans; or
- Indirectly induce substantial growth or concentration of population (i.e., introduction of an unplanned infrastructure project or expansion of a critical public facility (road or sewer line) necessitated by new development, either of which could result in the potential for new development not accounted for in the *Envision San José 2040 General Plan*).

A project would induce growth if it would remove barriers to population growth (e.g., a change to a General Plan and Zoning Ordinance that allowed new residential development to occur) or if it would result in economic growth that triggers an increase in population and housing through new housing construction and/or an influx of workers from outside the region.

The Project is an amendment to an airport master plan at an existing airport that is currently developed and used for aviation purposes. The Project does not include the development of new housing or population-generating uses or infrastructure that would directly encourage such uses. The Project would accommodate the forecasted increase in activity level at the Airport. The forecasted increase in activity is a result of planned growth and development in the region (i.e., buildout of approved general plans). For the reasons described in Section 8.5.1.1, the future increase in activity levels at the Airport would occur at that same level even if the Project were not implemented.

The Project would create new short- and long-term employment opportunities. During project construction, design, engineering, and construction-related jobs would be created. This would be a temporary situation, lasting until project construction is completed. Construction workers would likely come from the existing large labor pool within the Bay Area and would not result in new workers relocating to the area.

Similarly, the increase in employment needs from operation of the proposed Project is not expected to result in population in-migration or relocation because of the large size of the workforce that currently exists in the Bay Area region as a whole. Given the size of the existing labor pool and the prevalence of intercommunity commuting by workers between their places of work and places of residence, it is unlikely that workers would change their place of residence in response to the proposed Project; consequently, there would not be an increased need for new housing.

Therefore, no significant increase in population and housing would be triggered by implementation of the Project. As a result, the Project would not result in a significant growth in population in the vicinity of the Airport.

6.0 SIGNIFICANT AND IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA and the CEQA Guidelines require that an EIR address "significant irreversible environmental changes which would be involved in the proposed Project, should it be implemented." [CEQA Guidelines §15126(c)]

The environmental effects related to the implementation of the Project are discussed in Section 4 of this EIR. The Project site is already developed and dedicated to airport uses, and the Project would not result in a new commitment of land. However, implementation of the Project would require the long-term commitment of resources such as lumber, aggregate (sand and gravel), metals (e.g., steel, copper, lead), and petrochemical construction materials (e.g., plastics). This would represent the loss of renewable and nonrenewable resources that are generally not retrievable.

Construction and operation of the Project would also require energy resources such as electricity, natural gas, and various transportation-related fuels. This would represent the loss of non-renewable resources, which are generally not retrievable (refer to Section 4.6 for a discussion of energy impacts). As described in Section 4.6, there are sufficient resources to serve the Project.

Nonrecoverable materials and energy would be used during construction and operation activities; however, the amounts needed would be accommodated by existing supplies. Further, the Airport is committed to construct the proposed facilities to meet high standards for efficiency and environmental design, consistent with LEED standards. Implementation of LEED standards that emphasize strategies for sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality would reduce the use of renewable and nonrenewable resources that would continue over time through construction and long-term operation of the Project. In addition, the Project would implement a multitude of sustainability measures, such as those described in Table 4.3-5 and mitigation measures MM AIR-2.2 and MM GHG-1.1, which would serve to reduce the Project's use of nonrecoverable materials and energy.

Although sustainability measures would reduce the use of materials and energy during construction and operation of the Project, they would nevertheless be unavailable for other uses. The resources utilized for the Project would be permanently committed to the Airport and, therefore, be considered irreversible.

7.0 SIGNIFICANT AND UNAVOIDABLE IMPACTS

A significant unavoidable impact is an impact that cannot be mitigated to a less than significant level if the project is implemented as it is proposed. The following significant unavoidable impacts have been identified as a result of the Project:

- **Air Quality**: The Project would result in the following significant unavoidable air quality impacts:
  - Conflicts with the Clean Air Plan (Impact AIR-1)
  - NO_x emissions during construction (Impact AIR-2)
  - NO_x and PM_{10} emissions during operation (Impact AIR-2)
  - Cumulative NO_x and PM_{10} emissions (Impact AIR-C)

- **GHG Emissions**: The Project would result in the following significant unavoidable GHG emissions impacts:
  - Generation of GHG emissions that may have a significant impact on the environment (Impact GHG-1)
  - Conflicts with statewide emissions reduction targets (Impact GHG-2)
  - Cumulative GHG emissions (Impact GHG-C)

All other significant impacts of the proposed Project would be reduced to a less than significant level with the implementation of mitigation measures identified in this EIR.

8.0 ALTERNATIVES

8.1 INTRODUCTION

CEQA Guidelines Section 15126.6(a) states, "an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason."

This section of CEQA also provides guidance regarding what the alternatives analysis should consider. Subsection (b) further states the purpose of the alternatives analysis, as follows: Because an EIR must identify ways to mitigate or avoid the significant effects that a project may have on the environment (Public Resources Code [PRC] Section 21002.1), the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.

The CEQA Guidelines further require that the alternatives be compared to the project's environmental impacts and that the "no project" alternative be considered (CEQA Guidelines Section 15126.6[d] [e]). In defining "feasibility" (e.g.," … feasibly attain most of the basic objectives of the project…"), CEQA Guidelines Section 15126.6(f) (1) states, in part: Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

8.2 SIGNIFICANT IMPACTS OF THE PROPOSED PROJECT

As stated above, a focus of the discussion of alternatives is to determine if there are feasible alternatives that could avoid the significant impacts of the proposed Project. To recap the conclusions of the analyses in Section 4, the significant impacts of the proposed Project are as follows:

Air Quality: Emissions of NO_x during the construction and operational phases of the Project would exceed the thresholds of significance established by BAAQMD. Emissions of PM_{10} during the operational phase of the Project would exceed the thresholds of significance established by BAAQMD. **(Significant Unavoidable Impact)**

Greenhouse Gas Emissions: Although the Project includes measures to reduce GHG emissions, there would be a net increase in GHG emissions in 2037 as compared to existing/2018 conditions. **(Significant Unavoidable Impact)**

Hazards & Hazardous Materials: Construction at sites with soil and/or groundwater contamination could expose workers to health hazards. A rupture of a fuel storage tank could result in substantial environmental damage including potentially severe impacts to the ecosystem of the Guadalupe River. (**Less Than Significant Impact with Mitigation)**

Biological Resources: Capital improvements to be constructed as part of the Project would result in the loss of habitat for the Burrowing Owl, which is a special status species. Capital improvements to be constructed as part of the Project may conflict with the City's riparian Corridor Protection Policy by encroaching into the buffer/setback zone of the Guadalupe River. Increased NO_x emissions associated with the Project would contribute to the adverse effects of nitrogen deposition on serpentine grassland ecosystems. **(Less Than Significant Impact with Mitigation)**

Cultural Resources: Portions of the Airport are considered archaeologically-sensitive and, therefore, capital improvements to be constructed as part of the Project could impact as-yet-undiscovered buried cultural resources. **(Less Than Significant Impact with Mitigation)**

8.3 PROJECT OBJECTIVES

As listed in Section 3.4, the objectives of the proposed Project are as follows:

- To identify a phased program of specific airfield and landside facility improvements to accommodate, to the extent reasonable and feasible, current and future demand for commercial air carrier services.

- To develop a land use and facility plan that designates the most efficient and productive aviation-related use of all Airport property in conformance with all applicable FAA standards.

- To balance future development with the mitigation of adverse aircraft noise and other environmental impacts.

In addition, the *Envision San José 2040 General Plan* includes adopted aviation goals and policies that pertain to the development of the Airport, as follows:

- *Policy IE-4.2:* Continue developing a world-class airport and build national and international connections by attracting new air service to it.

- *Policy IE-4.3:* Support development of a transit link connecting the Mineta San José International Airport with light rail transit, Caltrain, and future BART.

- *Policy IE-4.5:* Continue implementation of improvements to Mineta San José International Airport facilities pursuant to the Airport Master Plan to maintain and expand regional, trans-continental, and international Airport operations.

- *Policy IE-4.9:* Pursue implementation of a people-mover that serves terminals at the Mineta San José International Airport and provides convenient connection to light rail and future BART transit systems.

- *Policy TR-13.1:* Promote airline service which meets the present and future air transportation needs of residents and the business community, and which minimizes impacts on the surrounding community.

- *Policy TR-13.2:* Implement capital improvements to Mineta San José International Airport as identified in its Airport Master Plan.

- *Policy TR-13.3:* Develop and encourage improved ground access connections between the Mineta San José International Airport and area freeways and public transit and rail systems.

8.4 ALTERNATIVES EVALUATED BUT REJECTED

This subsection describes alternatives that would utilize a location other than the existing Airport. The discussion is largely the same as that contained in the 1997 Airport Master Plan EIR because the facts remain essentially unchanged. This approach is consistent with CEQA Guidelines Section 15126.6 (f) (2), which allows reliance on a previous EIR's discussion of a location alternative to the extent the circumstances remain substantially the same as they relate to the alternative. Additionally, CEQA Guidelines Section 15126.6(a), quoted in the Introduction of this section, makes clear CEQA does not mandate that an EIR present a location alternative for consideration by the decision-makers, by virtue of the phrase "or to the location of the project." It is an option to include when relevant to the decision-making process, e.g. a public agency's initial decision to locate a public facility, such as an airport. In this case, the Airport exists where it does.

8.4.1 Use of Moffett Federal Airfield

8.4.1.1 *Description*

This alternative would result in the relocation of all operations at San José Airport to Moffett Federal Airfield (Moffett), which is adjacent to the Cities of Mountain View and Sunnyvale. Formerly operated by the U.S. Navy as Moffett Field Naval Air Station, the 952-acre airport was transferred to the National Aeronautics and Space Administration (NASA) in 1994 and, with minor exceptions, remains closed to civil aviation use.

For purposes of analysis, it is assumed that Moffett could accommodate the demand for air transportation that is forecasted for San José in 2037. Therefore, this alternative could be characterized as being the same as the Project but in a different location.

8.4.1.2 *Environmental Impacts*

The operational environmental impacts associated with the development of a civil airport at Moffett that would accommodate San José's air passenger, air cargo, and general aviation demand would be similar to those identified for the Project. The primary difference between the use of Moffett and the

Project would be the location where the impacts would occur. For example, the noise impacts associated with aircraft operations would be moved from the neighborhoods near San José Airport to the neighborhoods near Moffett. Similarly, airport-related traffic impacts would move from roadways in San José and Santa Clara to those in Sunnyvale and Mountain View. Burrowing owls are present at both San José Airport and Moffett, so moving operations from San José to Moffett would not avoid impacts to that species. Again, this is a transference of impacts from one location to another.

The abandonment of San José Airport as an airport serving the greater San José area would have significant economic and land use implications. Many of the businesses that existing in the vicinity of the Airport are located there to take advantage of doing business near the Airport. Relocation of San José Airport to Moffett could affect the viability of many of these businesses and could result in the relocation of many businesses to Mountain View or Sunnyvale. In addition, decisions regarding the future land uses of the Airport property would be required, and the environmental impacts of such land use decisions could be significant.

8.4.1.3 *Ability to Meet Project Objectives*

In the mid-1990's, NASA proposed opening Moffett to regular limited civil aviation use, specifically for air cargo operations. That proposal was withdrawn after strong community opposition, and Moffett remains a restricted federal facility. In any case, the City has no jurisdiction over the use of Moffett.

The relocation of air transportation operations to Moffett would not meet the objective of accommodating current and future demand for commercial aviation services at San José Airport. In addition, while this alternative would eliminate the significant impacts of the Project at San José, the same impacts would simply be transferred approximately six miles to the west to Moffett.

8.4.2 <u>Relocate San José Airport to New Airport Site in the Region</u>

8.4.2.1 *Description*

This alternative would result in the development of a new airport at another location in the greater San José area. Such a location is speculative since no location has been identified by the FAA or any regional planning agencies such as MTC.

A new airport in the greater San José area would require at least 1,000 acres of property (i.e., at least the same size as San José Airport) and likely would require more property to ensure that land use compatibility and noise impacts are adequately addressed.

For purposes of analysis, it is assumed that a new airport could accommodate the demand for air transportation that is forecasted for San José in 2037. Therefore, this alternative could be characterized as being the same as the Project but in a different location.

8.4.2.2 *Environmental Impacts*

The operational environmental impacts associated with the development of a new airport that would accommodate San José's air passenger, air cargo, and general aviation demand would be similar to those of the Project. The primary difference would be the location where the impacts would occur.

For example, the noise impacts associated with aircraft operations would be moved from the neighborhoods near San José Airport to the neighborhoods near the new airport. Similarly, airport-related traffic impacts would move from roadways in San José and Santa Clara to those near the new airport. Again, this is a transference of impacts from one location to another.

Any vacant site that would be of sufficient size to accommodate the relocation of the Airport would likely involve a substantial loss of agricultural and open space lands, as well as impacts to any biological resources at that location. Further, when compared to the existing Airport location, a relocated facility would be more distant from residents and businesses it serves, which would increase VMT, energy consumption, and emissions of pollutants. As an example, while the Coyote Valley area in south San Jose contains large areas of prime agricultural lands and open space that could potentially accommodate an airport, constructing at airport at that location would result in a significant and unmitigable loss of these resources. That location would be more distant from the homes and businesses of many San Jose Airport users, which would increase VMT. Finally, the noise and other environmental effects associated with aircraft operations at an airport in Coyote Valley would be transferred to neighborhoods not currented impacted by aircraft.[196]

Similar to the Use of Moffett Federal Airfield Alternative, the abandonment of San José Airport as an airport serving the greater San José area would have significant economic and land use implications. Many of the businesses existing in the vicinity of the Airport are located there to take advantage of doing business near the Airport. Relocation to a new airport could affect the viability of many of these businesses and could result in the relocation of many businesses. In addition, decisions regarding the future land uses of the Airport property would be required, and the environmental impacts of such land use decisions could be significant.

8.4.2.3 *Ability to Meet Project Objectives*

This alternative is inconsistent with the project objective of continuing to provide aviation services at San José Airport. The existing facilities at San José Airport represent a substantial public investment. No planning activity is underway or proposed by any federal, state, regional, or local agency regarding development of a replacement for San José Airport at a different location. Selection of an alternative airport location would require extensive design and environmental study well beyond the scope of the Project and would take years to implement even if a suitable site was ultimately selected and secured. Further, the environmental impacts of developing a major airport at a new location would be significantly greater than the impacts of the Project.

8.4.3 <u>Accommodate Air Transportation Demand at Other Bay Area Airports</u>

8.4.3.1 *Description*

This alternative would relocate all operations at San José Airport to either Metropolitan Oakland International Airport (OAK) or San Francisco International Airport (SFO). For purposes of analysis, it is assumed that OAK or SFO or a combination of the two airports could accommodate San José's

[196] In addition to the environmental issues cited above, building an airport in Coyote Valley would be difficult if not impossible because the City, Peninsula Open Space Trust, and the Santa Clara Valley Open Space Authority just purchased over 900 acres of open space and agricultural lands in Coyote Valley for permanent preservation.

projected 2037 demand. This alternative does not acknowledge whether the airfield or landside capacity at either airport could accommodate the existing and projected demand for San José and neighboring cities in Santa Clara County while accommodating projected demand in their respective service areas.

8.4.3.2 *Environmental Impacts*

The operational environmental impacts associated with the redistribution of San José operations to OAK or SFO would further increase the environmental impacts associated with the operation of those two airports. While aircraft-generated noise impacts would be eliminated in the vicinity of San José Airport, noise impacts at OAK or SFO would increase as additional flights are added at those facilities. In addition, the number of vehicle miles traveled (VMT) in the Bay Area would increase as air passengers in the greater San José area would be required to travel farther to use an airport. This would translate into increased air pollutant emissions within the air basin.

The abandonment of San José Airport as an airport serving the greater San José area would have significant economic and land use implications. Many of the businesses existing in the vicinity of the Airport are located there to take advantage of doing business near the Airport. Redistribution of air transportation services to OAK or SFO could affect the viability of many of these businesses and could result in the relocation of many businesses to areas around OAK or SFO. In addition, decisions regarding the future land uses of the Airport property would be required, and the environmental impacts of such land use decisions could be significant.

8.4.3.3 *Ability to Meet Project Objectives*

The redistribution of air transportation activities from San José to either OAK or SFO would not meet the objective of accommodating current and future demand for commercial air transportation services at San José Airport. The City has no jurisdiction over the use of OAK or SFO. Further, while this alternative would eliminate the significant impacts of the Project at San José, it would result in the transfer of those same impacts to OAK and/or SFO.

8.5 ALTERNATIVES CARRIED FORWARD FOR FURTHER CONSIDERATION

8.5.1 No Project Alternative #1: No New Facilities at the Airport

8.5.1.1 *Description*

No Project Alternative #1 would consist of no new or expanded or altered facilities at the Airport beyond those that currently exist or are under construction. None of the improvements listed in Table 3.3-1 would be implemented. None of the future improvements to the airfield would occur, the airfield modifications recommended by the RIM Study would not be implemented, and existing Runway 11/29 would remain. Other key improvement projects that would not be constructed would be the South Concourse of Terminal B, the final phase of the long-term parking garage, a short-term parking garage near Terminal B, a new 330-room business hotel, new air cargo facilities, new belly freight facilities, and the expansion of the fuel storage facility.

It is important to note that, although No Project Alternative #1 would consist of no new facilities, activity levels at the Airport are forecasted to continue to increase over 2018/baseline conditions. In other words, activity levels will increase irrespective of any decision to approve or disapprove the Project because the forecasts are based on projected economic, demographic, and market conditions in the region.[197] So long as there is a market for air transportation services and there are facilities to accommodate the demand, activity will continue to increase. For an expanded discussion of this topic, including the City's inability to directly regulate activity levels at the Airport pursuant to the Airline Deregulation Act of 1978, please see the discussion at the start of Section 3.0, *Project Description*.

In light of the above, the relevant question is how much of the forecasted demand for air transportation services in 2037 can be accommodated by the existing facilities at the Airport. To address this question, an analysis was undertaken by HNTB, an aviation planning firm with expertise in airport facilities. The analysis, a copy of which is Appendix L of this EIR, evaluated the capacity of the Airport's existing facilities to determine if their size would result in some portion of the demand not being served. Facilities evaluated included the airfield, passenger terminals, aircraft gates, parking supply, cargo and freight, general aviation, rental cars, and roadways. A key part of the analysis involved reviewing facility design capacities and comparing them to actual activity data at airports from around the country.

The analysis concluded that the projected 2037 demand can be accommodated by the Airport's existing facilities, albeit under congested conditions with delays and poor levels of service[198]. This conclusion comes from the data that show that people will endure delays and crowded conditions associated with facilities operating in excess of design capacity if there is service to a desired destination at an affordable price. In practical terms, this means that the 2037 forecasted activity levels that are shown in Table 3.2-1 are assumed to occur under No Project Alternative #1.

8.5.1.2 *Environmental Impacts*

Per the above discussion, the 2037 activity levels at the Airport will be the same under both No Project Alternative #1 and Project conditions. Specifically, under both scenarios there will be the same number of passengers and flights, the same volume of air cargo, and the same level of general aviation activity. Therefore, many of the operational environmental impacts would be similar, with the differences being as follows:

- For noise, since Runway 11/29 will be in use under No Project Alternative #1 and will be removed under the Project conditions, there will be a very slight shift in noise. This negligible shift is reflected in the data provided in Tables 8.5-1 and 8.5-2. In Table 8.5-1, CNEL values would be the same at all reference grid point locations except #17 where the change is 0.1 dB, which is imperceptible. Similarly, Table 8.5-2 shows that the difference in total acreage within the 65-dB CNEL contour between the Project and No Project Alternative #1 would be only 12 acres, a change of one half of one percent.

[197] Aviation forecasts are "unconstrained," meaning that they reflect the demand for air transportation irrespective of whether there are facilities that can accommodate the demand. This is similar to traffic demand forecasts. Unconstrained demand is important because it enables planners and designers to develop facilities that will have the capacity to serve the demand in a comfortable and efficient manner (i.e., at an acceptable level of service).
[198] Examples of poor levels of service include longer wait times at security, delays associated with aircraft waiting for available gates, crowded boarding areas, longer waits at baggage claims, lack of available parking, etc.

Table 8.5-1: Comparison of CNEL Values: No Project Alternatives vs Project

Reference Grid Point			CNEL (in dB)		
Num-ber	Location	City	2018 Existing	2037 Project	2037 No Project[a]
1	RMS 10 – Residential	Santa Clara	65.2	65.6	65.6
2	Public Utility (adjacent residential)	Santa Clara	62.2	62.5	62.5
3	Agnew Park (Agnew Road/Cheeney Street)	Santa Clara	64.4	64.9	64.9
4	Convalescent Hospital (Clyde Ave at Loch Lomond St.)	Santa Clara	65.2	65.3	65.3
5	Center for Performing Arts	San José	66.0	67.2	67.2
6	Montague Park/School	Santa Clara	65.2	65.4	65.4
7	Chestnut Street	Santa Clara	61.5	61.0	61.0
8	Fairway Glen Park/Hughes School	Santa Clara	60.5	60.1	60.1
9	Washington School	Santa Clara	64.5	65.6	65.6
10	Bellarmine Prep School	San José	57.6	57.6	57.6
11	Residential	San José	67.8	67.7	67.7
12	Alviso Community Center (SJ-Alviso Rd/Liberty St)	San José	58.1	57.7	57.7
13	Cottage Trailer Grove (Monterey Hwy/San José Ave)	San José	62.4	63.9	63.9
14	Agnews State Hospital (Lick Mill Rd/Lick Mill Blvd)	Santa Clara	59.2	58.2	58.2
15	Bachrodt School (Sonora Ave/Forrestal Ave)	San José	59.9	59.3	59.3
16	Hester School (The Alameda/Pershing Ave)	San José	54.1	54.1	54.1
17	Ryland Park (N First St/Fox Ave)	San José	57.3	57.5	57.4
18	Lamplighter Trailer Park (SW of SR 237 & N First St)	San José	56.8	55.9	55.9

Reference grid point locations are shown on Figure 8.5-1.

[a] CNEL values under No Project Alternatives #1 and #2 would be the same.

Bold type with shading = significant impact.

Source: BridgeNet International, 2019.

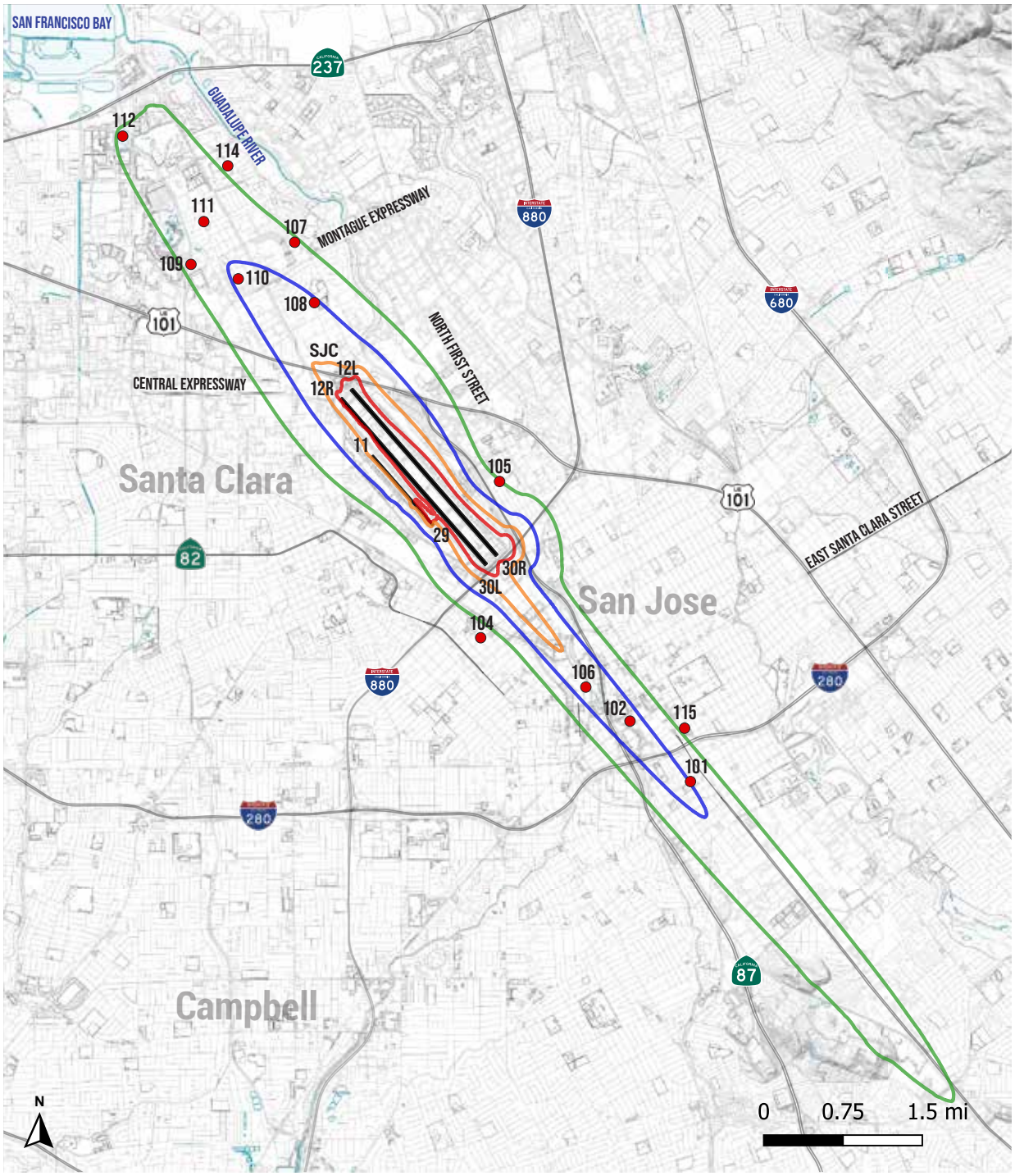
Table 8.5-2: Comparison of Aircraft Noise Exposure: No Project Alternatives vs Project

Land Use Category	No Project Alternatives[a]/2037 Noise Exposure Range (CNEL, dB)				Project/2037 Noise Exposure Range (CNEL, dB)			
	60 +	65 +	70 +	75 +	60 +	65 +	70 +	75 +
Residential (dwelling units)	10,600	0	0	0	10,602	0	0	0
Hospitals	0	0	0	0	0	0	0	0
Schools	6	0	0	0	6	0	0	0
Churches	2	0	0	0	2	0	0	0
Population	29,891	0	0	0	29,897	0	0	0
Total Land Area (acres)	6,458	2.358	846	408	6,443	2,346	827	399

Land uses that are deemed compatible with the Airport are not included in this table. For further discussion of the topic of land use compatibility, please see Section 4.13.2.1.

[a] Impacts under No Project Alternatives #1 and #2 would be the same.

Source: BridgeNet International, 2019.



Noise Monitoring Station

101 Site ID

Runway

75 dBA and Greater CNEL Contour

70 dBA and Greater CNEL Contour

65 dBA and Greater CNEL Contour

60 dBA and Greater CNEL Contour

NO PROJECT #1 AND #2 / 2037 CNEL CONTOURS | FIGURE 8.5-1

- For criteria air pollutants and GHGs, the efficiencies associated with the new and expanded facilities of the Project will result in a reduction of those emissions, as compared to No Project Alternative #1. For example, emissions from aircraft during the taxiing phases of flights will be lower under the Project because the proposed airfield improvements will reduce delay; this reduction in taxiing time due to the Project is quantified in Table 3.3-5. Similarly, constructing an on-Airport business hotel under the Project would likely reduce vehicle trips and associated emissions, as compared to under No Project Alternative #1 where trips to/from off-Airport locations would occur.

From an environmental impact perspective, the biggest differences between No Project Alternative #1 and the Project would be:

- None of the construction-related impacts of the Project would occur under No Project Aternative #1.

- The No Project Alternative #1 would avoid the impacts of the Project to the burrowing owl because no new facilities that would impact the owl and its habitat would be constructed.

8.5.1.3 *Ability to Meet Project Objectives*

No Project Alternative #1 would not meet the objective of reasonably and efficiently accommodating existing and future for air transportation services at the Airport. As stated previously, the projected 2037 demand could be accommodated by the Airport's existing facilities, albeit under congested conditions with delays and poor levels of service.

Without the improvements to the airfield that are part of the Project, the airfield would not function efficiently under No Project Alternative #1. The lack of adequate taxiways that provide connections between runways, ramps, and aircraft parking areas would make the taxiing phases of flight more circuitous with resulting increases in delay. Further, No Project Alternative #1 would not include any of the improvements to the airfield recommended by the RIM Study, such improvements that would enhance safety.

8.5.2 <u>No Project Alternative #2: Existing Airport Master Plan</u>

8.5.2.1 *Description*

No Project Alternative #2 would consist of building the remaining, yet-to-be-constructed capital improvement projects that are identified in the existing Airport Master Plan. Those improvement projects are listed in Table 3.3-1, where they are compared side-by-side to those improvements that would be constructed under the proposed Project. As can be seen from Table 3.3-1, many of the improvements listed under the existing Airport Master Plan are similar to those listed under the proposed Project. The key differences are summarized in Table 8.5-3.

8.5.2.2 *Environmental Impacts*

Per the discussion in Section 8.5.1.1, the 2037 activity levels at the Airport will be the same under both No Project Alternative #2 and Project conditions. Specifically, under both scenarios there will be the

Table 8.5-3: Key Facility Differences Between No Project Alternative #2 and the Project		
Capital Improvement Project	**Description Under Existing Airport Master Plan (No Project Alternative #2)**	**Description Under Amended Airport Master Plan (Proposed Project)**
Airfield/taxiway improvements	Would not be consistent with the recommendations of the RIM Study	Would be consistent with the recommendations of the RIM Study
Runway 11/29	Open	Removed
New Short-Term Parking Garage opposite Terminal B	3,000 parking spaces	5,000 parking spaces
New South Concourse of Terminal B	10 air carrier gates	14 air carrier gates
New Long-Term Parking Garage	9,000 parking spaces	6,000 parking spaces
New Business Hotel	Not included	330 guest rooms
Expanded Cargo Airline Facilities	1,200,000 square feet	500,000 square feet
Relocated Belly Freight Facilities	93,000 square feet	150,000 square feet

same number of passengers and flights, the same volume of air cargo, and the same level of general aviation activity. Therefore, many of the operational environmental impacts would be similar, with the differences being as follows:

- For noise, since Runway 11/29 will be in use under No Project Alternative #2 and will be removed under the Project conditions, there will be a very slight shift in noise. This negligible shift is reflected in the data in Tables 8.5-1 and 8.5-2. In Table 8.5-1, CNEL values would be the same at all reference grid point locations except #17 where the change is 0.1 dB, which is imperceptible. Similarly, Table 8.5-2 shows that the difference in total acreage within the 65-dB CNEL contour between the Project and No Project Alternative #2 would be only 12 acres, a change of one half of one percent. [Note: The noise impacts of No Project Alternatives #1 and #2 are identical.]

- For criteria air pollutants and GHGs, the efficiencies associated with the new and expanded facilities of the Project will result in a reduction of those emissions, as compared to No Project Alternative #2. For example, emissions from aircraft during the taxiing phases of flights will be lower under the Project because the proposed airfield improvements will reduce delay; this reduction in taxiing time due to the Project is quantified in Table 3.3-5.

Both No Project Alternative #2 and the Project include improvements to the airfield that will directly impact the burrowing owl and its habitat. As described in Section 4.5, the Project would result in the permanent loss of 32.4 acres of occupied burrowing owl nesting habitat and the degradation of 83.4 acres of nesting and roosting habitat at the airfield. While the acreage that would be impacted under No Project Alternative #2 has not been quantified, it is expected to be similar to that of the Project

because the airfield improvements listed in Table 3.3-1 will be constructed. It should also be noted that, based on updated data/changed circumstances regarding the Airport's population of burrowing owls, the mitigation for impacts to the burrowing owl that is described in the existing Burrowing Owl Management Plan would need to be enhanced.

Both No Project Alternative #2 and the Project include the construction of capital improvements at the Airport and, therefore, the construction-related impacts would be similar.

8.5.2.3 *Ability to Meet Project Objectives*

No Project Alternative #2 would meet the project objectives but to a lesser extent than the Project. This statement is based on the following:

- While No Project Alternative #2 includes many capital improvements that would serve to accommodate current and future demand for commercial aviation services at the Airport for a horizon year of 2027, it does not include the refinements and modifications to those improvements that are included in the proposed Project, such refinements that take into account the latest forecasts through 2037. Stated another way, the differences between No Project Alternative #2 and the Project that are highlighted in Table 8.5-3 are specifically tailored to address the latest forecasts and trends in air transportation.

- While No Project Alternative #2 includes various improvements to the airfield to enhance efficiency, those improvements do not reflect the recommendations of the RIM Study. The primary objective of the RIM Study was to enhance safety by reducing the potential for runway incursions to occur; see Section 3.3.1 for further discussion.

8.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The CEQA Guidelines state that an EIR shall identify an environmentally superior alternative. Three alternatives were evaluated but rejected due to infeasibility, and thus cannot be considered environmentally superior: Use of Moffett Federal Airfield, Relocate San José Airport to New Airport Site in the Region, and Accommodate Air Transportation Demand at Other Bay Area Airports. Two feasible alternatives were identified: No Project Alternative #1 – No New Facilities at the Airport, and No Project Alternative #2 – Existing Airport Master Plan.

The significant unavoidable impacts of the Project are associated with emissions of criteria air pollutants and GHGs. All other impacts were either determined to be less than significant or would be reduced to a less than significant level with mitigation. For criteria air pollutants and GHGs resulting from project operation, the efficiencies associated with the new and expanded facilities of the Project would result in a reduction of those emissions compared to No Project Alternative #1 and No Project Alternative #2. In other words, the two feasible alternatives to the Project would exacerbate the significant unavoidable operational impacts of the Project. However, No Project Alternative #1, which would not include any construction activities, would avoid the Project's significant unavoidable impact associated with NOx emissions during construction, and is environmentally superior in that respect.

CEQA Guidelines Section 15126.6(e)(1) states "if the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives." As described above, the only feasible alternatives to the project are No Project Alternative #1 and No Project Alternative #2. As a result, the environmentally superior alternative other than No Project Alternative #1 is the Project itself.

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10.0 LEAD AGENCY AND CONSULTANTS

10.1 LEAD AGENCY

City of San José - Department of Aviation

John Aitken, Director
Judy Ross, Assistant Director
Cary Greene, Senior Airport Planner
Ryan Sheelen, Airport Planner

City of San José - Department of Planning, Building, and Code Enforcement

Rosalynn Hughey, Director
David Keyon, Supervising Environmental Planner

10.2 CONSULTANTS

David J. Powers & Associates, Inc. [EIR]
San José, California

John Hesler, Principal Project Manager
Akoni Danielsen, Principal Project Manager
Judy Shanley, Principal Project Manager
Michael Lisenbee, Senior Project Manager
Mike Campbell, Project Manager
Natalie Noyes, Project Manager
Desiree Dei Rossi, Assistant Project Manager
Maria Kisyova, Researcher
Zach Dill, Graphic Artist

Hexagon Transportation Consultants [Transportation]
San José, California

H. T. Harvey & Associates [Biology]
Los Gatos, California

Ramboll US Corporation [Air Quality, GHG, Energy]
Irvine, California

BridgeNet International [Noise]
Newport Beach, California

HMH Engineers [Hydrology and Water Quality]
San José, California

Cornerstone Earth Group, Inc. [Hazards and Hazardous Materials]
Sunnyvale, California