

DRAFT
Supplemental Environmental Impact Report
2018 Alves Ranch Project
City of Pittsburg, Contra Costa County, California

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ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius (Centigrade)
°F	degrees Fahrenheit
µg/m ³	micrograms per cubic meter
af	acre-foot
AFY	acre-feet per year
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ABAG	Association of Bay Area Governments
AChP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ACP	Alternative Compliance Plan
ADT	average daily traffic
ADA	Americans with Disabilities Act
AIA	Airport Influence Area
AIC	Archaeological Information Center
AICUZ	Air Installation Compatibility Use Zone
ALUC	Airport Land Use Commission
APCD	Air Pollution Control District
APE	Area of Potential Effect
APN	Assessor's Parcel Number
AQMD	Air Quality Management
ARB	California Air Resources Board
AST	aboveground storage tank
ATCM	Airborne Toxic Control Measures
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BMP	Best Management Practices
BVOC	biogenic volatile organic compound
CAAQS	California Ambient Air Quality Standards
Cal/OSHA	California Occupational Health and Safety Administration
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CAP	Clean Air Plan
CCR	California Code of Regulations

Acronyms and Abbreviations

CCTA	Contra Costa Transportation Agency
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CH ₄	methane
CHL	California Historical Landmarks
CMA	congestion management agency
CMP	Congestion Management Plan
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂ e	carbon dioxide equivalent
CPHI	California Points of Historical Interest
CPUC	California Public Utilities Code
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
dB	decibel
DOT	United States Department of Transportation
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
ECCRFFA	East Contra Costa Regional Fee and Financing Authority
EIR	Environmental Impact Report
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FAR	floor area ratio
FCS	FirstCarbon Solutions
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
GPS	Global Positioning System
GWh/y	gigawatt-hours per year
GWP	global warming potential
HCM	Highway Capacity Manual
HFC	hydrofluorocarbon
HOV/HOT	High Occupancy Vehicle/High Occupancy Toll

HRA	Health Risk Assessment
HRI	Historic Resources Inventory
HVAC	heating, ventilation, and air conditioning
ICM	Integrated Corridor Management
L _{dn}	day/night average sound level
LED	light emitting diode
L _{eq}	equivalent sound level
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MMI	Modified Mercalli Intensity
mph	miles per hour
MTS	Metropolitan Transportation System
MTSO	Multimodal Transportation Service Objective
MXD	mixed-use development
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NOC	Notice of Completion
NOP	Notice of Preparation
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O ₃	ozone
OEHHA	California Office of Environmental Health Hazard Assessment
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
PeMS	Performance Measurement System
PFC	perfluorocarbon
Phase I ESA	Phase I Environmental Site Assessment
PM _x	particulate matter
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PVC	polyvinyl chloride

Acronyms and Abbreviations

RMP	Risk Management Plan
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Board
SF ₆	sulfur hexafluoride
SFPUC	San Francisco Public Utilities Commission
SO ₂	sulfur dioxide
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
State Water Board	State Water Resources Control Board
TAC	toxic air contaminants
TCM	transportation control measures
TDM	Transportation Demand Management
TDS	total dissolved solids
Tg	teragram
therms/y	therms per year
TMA	Transportation Management Association
TMDL	Total Maximum Daily Load
TOD	Transit Oriented Development
TSM	Transportation Systems Management
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
UWMP	Urban Water Management Plan
V/C	volume to capacity ratio
WDR	Waste Discharge Requirements

EXECUTIVE SUMMARY

Purpose

This Draft Supplemental Environmental Impact Report (Draft SEIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the implementation of the Alves Ranch Project (State Clearinghouse No. 2004012097). This document is prepared in conformance with CEQA (California Public Resources Code [PRC], § 21000, et seq.) and the CEQA Guidelines (California Code of Regulations [CCR], Title 14, § 15000, et seq.).

The purpose of this Draft SEIR is to inform decision makers, representatives of affected and responsible agencies, the public, and other interested parties of the potential environmental effects that may result from implementation of the proposed project. This Draft SEIR describes potential impacts relating to a wide variety of environmental issues and methods by which these impacts can be mitigated or avoided.

Project Summary

Project Location

The project site is located in the City of Pittsburg, Contra Costa County, California. The 57.81-acre project site is bounded by a single-family residential neighborhood (Toscana at San Marco) (west), State Route 4 (SR-4) (north), undeveloped land (east), and West Leland Road (south).

Project Description

The 2018 Alves Ranch Project (“2018 Project”) consists of the development of 346 single-family dwelling units and 10 accessory dwelling units on approximately 25.93 acres, and the rezoning of approximately 12 acres of the project site for up to 140,000-square-foot of neighborhood- and community-serving commercial uses. The 2018 Project also proposes to relocate the commercial uses to the center of the project site, with residential uses to be located on the northern, eastern, and western edges. Vehicular access would be taken from two points off West Leland Road. Approximately 1.28 acres of recreation and/or landscaped open space and an approximately 0.9-acre Class I bicycle and pedestrian facility would be provided. Refer to Section 2, Project Description, for further detail.

Project Objectives

The objectives of the proposed project are to:

1. Contribute to the local economy through new capital investment, expansion of the tax base, and creation of new jobs and housing opportunities.
2. Promote infill growth within the existing City limits that is consistent with the City of Pittsburg General Plan.

3. Develop new housing, employment, and shopping opportunities within walking distance of the Pittsburg/Bay Point Bay Area Rapid Transit (BART) station.
4. Add more inventory to the local and regional housing supply.
5. Provide flexibility with the 12 acres reserved for future commercial use in order to be responsive to market conditions.
6. Provide new recreational opportunities including trails and active recreation areas.
7. Complete the buildout of the Southwest Hills General Plan Amendment and Vista Del Mar Projects.
8. Improve utilization of an existing storm drainage basin by increasing the outfall height as opposed to constructing a new basin or expanding an existing basin.
9. Close a gap in the pedestrian/bicycle network by constructing a Class I multi-use path along the project frontage with West Leland Road.

Significant Unavoidable Adverse Impacts

The proposed project would result in the following significant unavoidable impacts:

- **Near-Term Traffic Conditions:** The proposed project would contribute new vehicle trips to intersections that would operate at deficient levels of service under Near-Term conditions. Mitigation is proposed to improve operations to acceptable levels; however, because implementation of improvements requires the cooperation of third party agencies, the residual significance of this impact is significant unavoidable.
- **Cumulative Traffic Conditions:** The proposed project would contribute new vehicle trips to intersections that would operate at deficient levels of service under cumulative conditions. Mitigation is proposed to improve operations to acceptable levels; however, because implementation of improvements requires the cooperation of third party agencies, the residual significance of this impact is significant unavoidable.
- **Congestion Management Plan Facilities:** The proposed project would contribute new vehicle trips to SR-4 mainline segments and ramps that would operate at deficient levels of service. Mitigation is proposed to improve operations to acceptable levels; however, because implementation of improvements requires the cooperation of third party agencies, the residual significance of this impact is significant unavoidable.
- **Greenhouse gas emissions:** Annual operational greenhouse gas (GHG) emissions for the year 2021 and 2030 would exceed the applicable Bay Area Air Quality Management District (BAAQMD) service population threshold. The impact would be reduced with implementation of Mitigation Measure GHG-1, but the impact would remain significant and avoidable.

Summary of Project Alternatives

In Accordance with CEQA Section 15126.6 (a), the 2004 Final EIR identified five alternatives that could avoid or substantially lessen the impacts of the 2004 project, three of which would also feasibly attain most of the basic project objectives.

CEQA Guidelines Section 15163 establishes that Supplemental EIRs “need only contain the information necessary to make the previous EIR adequate for the project as revised.” In this case, the 2004 Final EIR considered a no project alternative and four development alternatives that provided a reasonable range of potentially feasible scenarios that could reduce or avoid the identified impacts. One of the Alternatives (the Reconfigured Layout Alternative), primarily involved changes to land uses south of West Leland Road and outside the 2018 Project site. Accordingly, this Alternative is no longer applicable to the analysis of the 2018 Project.

As described more fully in Section 2.0, Project Description, the 2018 Project is similar in nature than the project evaluated in the 2004 Final EIR, as are the identified significant impacts (as discussed above and throughout this Draft SEIR). The 2004 Final EIR assumed a total of 563 residential units north of West Leland Road, while the 2018 Project proposes 356 residential units. The 2004 Final EIR assumed a total of 206,000 square feet of office uses and 51,500 square feet of retail uses north of West Leland Road, while the 2018 Project proposes up to 140,000 square feet of commercial, including a 40,000-square-foot grocery store.

The alternatives studied in the 2004 Final EIR included a reasonable range of residential uses (225 units, 332 units, and 449 units), as well as consideration of commercial and office uses, for purposes of providing a thoughtful comparative assessment, which remain valid for the purposes of evaluating the 2018 Project.

Areas of Controversy

Pursuant to CEQA Guidelines Section 15123(b), a summary section must address areas of controversy known to the lead agency, including issues raised by agencies and the public, and it must also address issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

A Notice of Preparation (NOP) for the proposed project was issued on December 18, 2018. The NOP describing the original concept for the project and issues to be addressed in the EIR was distributed to the State Clearinghouse, responsible agencies, and other interested parties for a 30-day public review period extending from December 18, 2018, through January 16, 2019. The NOP identified the potential for significant impacts on the environment related to the following topical areas:

- Air Quality
- Biological Resources
- Greenhouse Gas Emissions
- Noise
- Transportation

Disagreement Among Experts

This Draft SEIR contains substantial evidence to support all the conclusions presented herein. It is possible that there will be disagreement among various parties regarding these conclusions, although the City of Pittsburg is not aware of any disputed conclusions at the time of this writing. Both the CEQA Guidelines and case law clearly provide the standards for treating disagreement among experts. Where evidence and opinions conflict on an issue concerning the environment, and the lead agency knows of these controversies in advance, the EIR must acknowledge the controversies, summarize the conflicting opinions of the experts, and include sufficient information to allow the public and decision makers to make an informed judgment about the environmental consequences of the proposed project.

Potentially Controversial Issues

Below is a list of potentially controversial issues that may be raised during the public review and hearing process of this Draft SEIR:

- Air Quality
- Biological Resources
- Greenhouse Gas Emissions
- Noise
- Transportation

It is also possible that evidence will be presented during the 45-day, statutory Draft EIR public review period that may create disagreement. Decision makers would consider this evidence during the public hearing process.

In rendering a decision on a project where there is disagreement among experts, the decision makers are not obligated to select the most environmentally preferable viewpoint. Decision makers are vested with the ability to choose whatever viewpoint is preferable and need not resolve a dispute among experts. In their proceedings, decision makers must consider comments received concerning the adequacy of the Draft EIR and address any objections raised in these comments. However, decision makers are not obligated to follow any directives, recommendations, or suggestions presented in comments on the Draft EIR, and can certify the Final EIR without needing to resolve disagreements among experts.

Public Review of the Draft SEIR

Upon completion of the Draft SEIR, the City of Pittsburg filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (PRC § 21161). Concurrent with the NOC, this Draft SEIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft SEIR in accordance with Public Resources Code 21092(b)(3). During the public review period, the Draft SEIR, including the technical appendices, is available for review at the City of Pittsburg offices and the Pittsburg Library. The address for each location is provided below:

City of Pittsburg
65 Civic Avenue
Pittsburg, CA 94565

Hours:

Monday–Friday: 8:00 a.m. to 12:00 p.m.;
1:00 p.m. to 4:30 p.m.

Pittsburg Library
80 Power Avenue
Pittsburg, CA 94565

Hours:

Tuesday: 12:00 p.m. to 8:00 p.m.
Wednesday: 10:00 a.m. to 6:00 p.m.
Thursday: 1:00 p.m. to 8:00 p.m.
Friday and Saturday: 11:00 a.m. to 5:00 p.m.

Agencies, organizations, and interested parties have the opportunity to comment on the Draft SEIR during the 45-day public review period. Written comments on this Draft SEIR should be addressed to:

Jordan Davis, Senior Planner
65 Civic Avenue
Pittsburg, CA 94565
Phone: 925.252.4015
Fax: 925.252.4814
Email: jdavis@ci.pittsburg.ca.us

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to all significant environmental issues raised will be prepared and made available for review by the commenting agencies at least 10 days prior to the public hearing before the City of Pittsburg on the project, at which the certification of the Final EIR will be considered. Comments received and the responses to comments will be included as part of the record for consideration by decision makers for the project.

Executive Summary Matrix

Table ES-1 below summarizes the impacts, mitigation measures, and resulting level of significance after mitigation for the relevant environmental issue areas evaluated for the proposed project. The table is intended to provide an overview; narrative discussions for the issue areas are included in the corresponding section of this Draft SEIR. Table ES-1 is included in the Draft SEIR as required by CEQA Guidelines Section 15123(b)(1).

Table ES-1: Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 3.1—Air Quality		
Impact AIR-1: The 2018 Project would not conflict with or obstruct implementation of the applicable air quality plan.	No mitigation is necessary.	Less than significant impact.
Impact AIR-2: The 2018 Project would not 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.	None.	Less than significant impact.
Impact AIR-3: The 2018 Project would expose sensitive receptors to substantial pollutant concentrations.	<p>MM AIR-1: Implement BAAQMD Best Management Practices During Construction</p> <p>The following text is a refinement of MM 15-1 from the 2004 Final EIR. The text is updated to reflect current BAAQMD best practices.</p> <p>The following Best Management Practices (BMPs), as recommended by BAAQMD, shall be included in the project design and implemented during construction:</p> <ul style="list-style-type: none"> • All active construction areas shall be watered at least three times per day. • All exposed non-paved surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and access roads) shall be watered at least three times per day and/or non-toxic soil stabilizers shall be applied to exposed non-paved surfaces. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered and/or shall maintain at least 2 feet of freeboard. • 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. • 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 5 minutes (as required 	Less than significant after mitigation.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>by the California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage regarding idling restrictions shall be provided for construction workers at all access points.</p> <ul style="list-style-type: none"> • 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. • The prime construction contractor shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The City of Napa and the construction contractor shall take corrective action within 48 hours. BAAQMD’s phone number shall also be visible to ensure compliance with applicable regulations <p>MM AIR-2: Use Construction Equipment That Meets Tier 3 Off-road Emission Standards</p> <p>During construction activities, all off-road equipment with engines greater than 50 horsepower shall meet either EPA or ARB Tier 3 Final off-road emission standards. The construction contractor shall maintain records concerning its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information may include but are not limited to equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number.</p>	
Section 3.2—Biological Resources		
<p>Impact BIO-1: The 2018 Project may have a substantial adverse impact on special-status plant and wildlife species.</p>	<p>MM BIO-1a: Burrowing Owl</p> <p>No more than 30 days prior to the first ground-disturbing activities, the project applicant shall retain a qualified biologist to conduct a preconstruction survey on the project site. The survey shall establish the presence or absence of western burrowing owl and/or burrows, and evaluate any use by owls in accordance with applicable CDFW survey guidelines.</p> <p>On the portion of the project site where the ground disturbing activity is proposed, the biologist shall survey the proposed disturbance footprint and</p>	<p>Less than significant impact.</p>

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>a 500-foot radius from the perimeter of the proposed footprint to identify whether any burrows and/or owls are present. Adjacent areas on the project site that are not being proposed for ground disturbance need not be surveyed. The survey shall take place near the sunrise or sunset in accordance with applicable CDFW guidelines. All burrows or burrowing owls (if any) shall be identified and mapped. During the breeding season (February 1–August 31), surveys shall document whether burrowing owls (if any) are nesting on or directly adjacent to disturbance areas. During the non-breeding season (September 1–January 31), surveys shall document whether burrowing owls (if any) are using habitat on or directly adjacent to any disturbance area. Survey results shall be valid only for the season during which the survey is conducted.</p> <p>If burrowing owls are not discovered during the above-described pre-construction surveys, or if burrows are identified but are inactive, further mitigation is not required.</p> <p>If burrowing owls are observed during the pre-construction surveys, the project applicant shall perform the following measures to limit the impact on the burrowing owls:</p> <ul style="list-style-type: none"> • Avoidance shall include establishment of a 160-foot non-disturbance buffer zone. Construction may occur during the breeding season if a qualified biologist monitors the nest and determines that the birds have not begun egg-laying and incubation, or that the juveniles from the occupied burrows have fledged. During the non-breeding season (September 1–January 31), the project proponent shall avoid the owls and the burrows they are using, if possible. Avoidance shall include the establishment of a 160-foot non-disturbance buffer zone. • If it is not possible to avoid occupied burrows, passive relocation shall be implemented. Owls shall be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors in burrow entrances. These doors shall be in place for 48 hours prior to excavation. The project area shall be monitored daily for 1 week to confirm that the owl has abandoned the burrow. Whenever possible, burrows 	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>should be excavated using hand tools and refilled to prevent re-occupation. Plastic tubing or a similar structure shall be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.</p> <p>MM BIO-1b: Swainson’s Hawk Prior to any ground disturbance that occurs during the nesting season for Swainson’s hawk (March 15 to September 15), a qualified biologist shall conduct a preconstruction survey no more than 30 days prior to construction to establish whether there are any Swainson’s hawk nests within 1,000 feet of the project site, and if so, whether they are occupied. If potentially occupied nests within 1,000 feet are located adjacent to but not on the project site, then their occupancy shall be determined by observation from public roads or other publicly accessible observation areas of Swainson’s hawk activity (e.g., foraging) near the project site. If Swainson’s Hawks are not discovered during the above-described pre-construction surveys, or if a nest is identified but is inactive, further mitigation is not required.</p> <p>If nests are located and determined to be occupied, minimization measures and construction monitoring are required as follows:</p> <ul style="list-style-type: none"> • In order to mitigate for the loss of Swainson’s hawk foraging habitat to a less than significant level, the Project applicant shall acquire conservation easements or other instruments to preserve suitable foraging habitat for Swainson’s hawk, as determined by the California Department of Fish and Game. The location of mitigation parcels as well as the conservation instruments protecting them shall be acceptable to the City and to the California Department of Fish and Game. The amount of land preserved shall be governed by a 1:1 mitigation ratio for each acre developed at the Project site. In deciding whether to approve the land proposed for preservation by the Project applicant, the City shall consider the benefits of preserving lands in proximity to other protected lands. The preservation of land shall be done prior to any site disturbance, such as clearing or grubbing, or the issuance of any permits for grading, building, or other site improvements, whichever occurs first. In addition, the City shall impose the following minimum conservation easement content standards: 	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> • The land to be preserved shall be deemed suitable Swainson’s hawk foraging habitat by the California Department of Fish and Wildlife. • All owners of the mitigation land shall execute the document encumbering the land. • The document shall be recordable and contain an accurate legal description of the mitigation land. • The document shall prohibit any activity which substantially impairs or diminishes the land’s capacity as suitable Swainson’s hawk foraging habitat. • If the land’s suitability as foraging habitat is related to existing agricultural uses on the land, the document shall protect any existing water rights necessary to maintain such agricultural uses on the land covered by the document, and retain such water rights for ongoing use on the mitigation land. • The applicant shall pay to the City a mitigation monitoring fee to cover the costs of administering, monitoring and enforcing the document in an amount determined by the receiving entity, not to exceed 10% of the easement price paid by the applicant, or a different amount approved by the City Council, not to exceed 15% of the easement price paid by the applicant. • Interests in mitigation land shall be held in trust by an entity acceptable to the City and/or the City in perpetuity. The entity shall not sell, lease, or convey any interest in mitigation land which it shall acquire without the prior written approval of the City. • The City shall be named a beneficiary under any document conveying the interest in the mitigation land to an entity acceptable to the City. • If any qualifying entity owning an interest in mitigation land ceases to exist, the duty to hold, administer, monitor and enforce the interest shall be transferred to another entity acceptable to the City or to the City. <p>Before committing to the preservation of any particular land pursuant to this measure, the Project proponent shall obtain the City’s approval of the land proposed for preservation. This mitigation measure may be fulfilled in combination with a mitigation measure imposed on the project requiring</p>	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>the preservation of agricultural land as long as the agricultural land is determined by the Department of Fish and Wildlife to be suitable Swainson’s hawk habitat.</p> <p>MM BIO-1c: Migratory and Nesting Birds</p> <p>Prior to the start of construction, the implementation of the following avoidance and minimization measures would avoid or minimize potential effects to migratory birds and habitat in and adjacent to the project site. These measures shall be required to be implemented for construction work that occurs during the nesting season (February 15 through August 31). No mitigation measures shall be required during the non-nesting season (September 1 through February 14)</p> <ul style="list-style-type: none"> • If construction or tree removal is proposed during the nesting season for migratory birds (February 15 through August 31), a qualified biologist shall conduct pre-construction surveys for ground nesting birds and migratory species, such as the northern harrier, within the construction area, including a 300-foot survey buffer, no more than 3 days prior to the start of ground disturbing activities in the construction area. • If an active nest of any of the above-identified migratory birds is located during pre-construction surveys, then the project applicant shall adhere to notification requirements to USFWS and/or CDFW (as appropriate) regarding the status of the nest as may be required under applicable laws and regulations. Furthermore, construction activities shall be restricted as necessary within any identified buffer area (as determined by the qualified biologist) to avoid disturbance of the nest until it is abandoned or a qualified biologist deems disturbance potential to be minimal. Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 300 feet around an active raptor nest and 50-foot radius around an active migratory bird nest) or alteration of the construction schedule. • A qualified biologist shall: determine the size of the appropriate buffer and delineate the identified buffer using nest buffer signs, ESA fencing, pin flags, and or flagging tape. The buffer zone shall be maintained around the active nest site(s) until the young have fledged and are foraging independently, at 	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	which time no further mitigation shall be required.	
Impact BIO-2: The 2018 Project would not have adverse impacts on sensitive natural communities or riparian habitat.	No mitigation is necessary.	Less than significant impact.
Impact BIO-3: The 2018 Project would not have a substantial adverse effect on wetlands or jurisdictional features.	No mitigation is necessary.	No impact.
Impact BIO-4: The 2018 Project would not have substantial adverse impacts on fish or wildlife movement.	No mitigation is necessary.	Less than significant impact.
Section 3.3—Greenhouse Gas Emissions		
Impact GHG-1: Implementation of the 2018 Project would generate direct and indirect greenhouse gas emissions that could result in a significant impact on the environment.	<p>MM GHG-1: Implement Measures to Reduce GHG Emissions Prior to the issuance of the first certificate of occupancy for the relevant portion of the 2018 Project (i.e., residential or commercial), or building final as appropriate, the residential or commercial applicant (as relevant) shall provide documentation to the City of Pittsburg that the following measures have been achieved:</p> <p>Residential Measures</p> <ul style="list-style-type: none"> • Provide 100 percent renewable energy through either one or a combination of (1) Installation of solar photovoltaic systems consistent with the 2019 Building Energy Efficiency Standards and/or (2) Purchase 100 percent renewable energy for electricity consumption on the project site. For the purchase of renewable energy, prior to the issuance of the first certificate of occupancy for the residential portion of the 2018 Project, the Project applicant shall record Conditions, Covenants and Restrictions (CCRs) that require each homeowner to enroll into and maintain enrollment on an ongoing basis in the Marin Clean Energy’s “Deep Green” or “Local Sol” program, or similar program offered at the time of project occupancy, to purchase 100 percent renewable energy for electricity consumption on the project site. • Provide electrical outlets on the outside of the homes or outlets within 	Significant and unavoidable.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>the garages to encourage the use of electrical landscaping equipment.</p> <ul style="list-style-type: none"> • Install on-demand electric or solar water heaters. • Use water efficient landscapes and native/drought-tolerant vegetation. • Install smart meters and programmable thermostats. <p>Commercial Measures</p> <ul style="list-style-type: none"> • Install on-site charging units for electric vehicles consistent with parking requirements in California Green Building Standards Code Section 5.106.5.2. • Dedicate on-site parking for shared vehicles. • Install on demand electric water heating instead of natural gas water heating for some or all of the project’s hot water needs, to the extent such technology is then readily available and commercially practicable. • Provide adequate, safe, convenient, and secure on-site bicycle parking and storage in the commercial portion of the project. 	
<p>Impact GHG-2: Implementation of the 2018 Project would not conflict with the applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases.</p>	<p>No mitigation is necessary.</p>	<p>Less than significant impact.</p>
<p>Section 3.4—Noise</p>		
<p>Impact NOI-1: The 2018 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.</p>	<p>MM NOI-1: To reduce potential traffic noise impacts, the following multi-part mitigation measure shall be implemented for the 2018 Project:</p> <p>a) The 2018 Project shall construct a soundwall (or equivalent) to protect residential units bordering West Leland Road. The soundwall (or equivalent) shall be a minimum 8-foot high above the finished grade of the residential units. Notwithstanding the foregoing, the 2018 Project applicant may propose an equivalent measure so long as the 2018 Project applicant can demonstrate, via an updated acoustical analysis prepared by a qualified noise consultant and approved by the City Engineer, that the applicable performance standards will be achieved with implication of this equivalent measure. The soundwall (or equivalent) shall effectively block the line of sight to West Leland Road for proposed outdoor active use areas (i.e.,</p>	<p>Less than significant impact.</p>

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>backyards or side yards) of all residential units within 100 feet of the edge of the southern project property line. The soundwall (or equivalent) shall be of solid construction, with no vertical or horizontal gaps, and shall have a minimum surface weight of 4 pounds per square foot. The acceptability of the proposed combination of soundwall (or equivalent) mitigation shall be confirmed by the City Engineer, as part of the final plans and permitting process, to ensure compliance with the applicable performance standards.</p> <p>b) The 2018 Project shall implement an alternative form of ventilation for all proposed residential units within 200 feet of the centerline of West Leland Road, and within 400 feet of the centerline of SR-4. This alternative form of ventilation would give an occupant the option of controlling noise by keeping the windows shut in order to reduce potential traffic noise impacts to a less than significant level. A standard central air conditioning system or a central heating system equipped with a ‘summer switch,’ which allows the fan to circulate air without furnace operation requiring mechanical ventilation, will provide a habitable interior environment and meet the airflow provisions under building code requirements.</p> <p>c) The 2018 Project shall construct a soundwall (or equivalent) to protect residential units bordering SR-4. The soundwall (or equivalent) shall be a minimum 10-foot high above the finished grade of the residential units. Notwithstanding the foregoing, the 2018 Project applicant may propose an equivalent measure so long as the 2018 Project applicant can demonstrate, via an updated acoustical analysis prepared by a professional acoustical consultant and approved by the City Engineer, that the applicable performance standards will be achieved with implication of this equivalent measure. The soundwall (or equivalent) shall effectively block the line of sight to SR-4 for all first floor units and proposed outdoor active use areas (i.e., backyards) of all residential units within 400 feet of the centerline of SR-4. The soundwall shall be of solid construction, with no vertical or horizontal gaps, and shall have a minimum surface weight of 4 pounds per square foot. The acceptability of the proposed mitigation shall be confirmed by the City Engineer, as part of the final plans and permitting process, to ensure compliance with the applicable performance standards.</p>	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>d) The 2018 Project shall provide upgraded wall and window assemblies for all second story residential units in Neighborhoods A-1 and A-2 that would have a direct line of sight to SR-4 and the BART rail line. The combined wall and window assembly shall have a minimum Standard Transmission Class (STC) rating of 32-STC. This will provide sufficient noise reduction, with an adequate margin of safety, to ensure the 45 dBA L_{dn} interior noise level standard is maintained (74 dBA–32 dBA = 42 dBA). Prior to issuance of building permits, the applicant shall have a professional acoustic consultant review the final design plans to confirm with the City Engineer that the design would provide the required STC rating.</p>	
<p>Impact NOI-2: The 2018 Project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.</p>	<p>MM NOI-2: To reduce potential impacts related to construction noise, the Project shall restrict construction-related activities to normal business hours of 8:00 a.m. to 5:00 p.m. Monday through Friday. The Project shall also implement the following construction period noise abatement measures and best practices:</p> <ul style="list-style-type: none"> • The construction contractor shall ensure that all internal combustion engine-driven equipment is equipped with mufflers that are in good condition and appropriate for the equipment. • The construction contractor shall select quiet construction equipment, particularly air compressors, whenever feasible • The construction contractor shall locate stationary noise-generating equipment as far as feasible from sensitive receptors when sensitive receptors adjoin or are near a construction project area. In addition, the project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, whenever feasible. • The construction contractor shall prohibit unnecessary idling of internal combustion engines. • The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction. • Designate a “noise disturbance coordinator” who would be responsible 	<p>Less than significant impact.</p>

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g. starting too early, bad muffler, etc.) and institute reasonable measures, consistent with this Improvement Measure, warranted to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site.</p> <ul style="list-style-type: none"> • Route all construction traffic to and from the project site via designated truck routes where practical. Prohibit construction-related heavy truck traffic in residential areas where feasible. • The construction contractor shall limit noise producing construction activity to the daytime hours between 8:00 a.m. and 5:00 p.m. 	
Section 3.5—Transportation		
<p>Impact TRANS-1: The 2018 Project may contribute to unacceptable intersection operations under Existing Plus Project Conditions.</p>	<p>Implement Mitigation Measure TRANS-1a and Mitigation Measure TRANS-4. MM TRANS-1a: Prior to issuance of building permits, the 2018 Project applicant shall pay applicable Local Traffic Mitigation Fee to the City of Pittsburgh, which could be used to construct intersection improvements that would result in acceptable operations, which could include widening the northbound San Marco Boulevard north of West Leland Road to allow the westbound right movement to operate as a free tuning movement.</p>	<p>Significant unavoidable impact.</p>
<p>Impact TRANS-2: The 2018 Project may contribute to unacceptable intersection operations under Near-Term Conditions.</p>	<p>Implement Mitigation Measure TRANS-1a and Mitigation Measure TRANS-4.</p>	<p>Significant unavoidable impact.</p>
<p>Impact TRANS-3: The 2018 Project may contribute to unacceptable intersection operations under Cumulative Conditions.</p>	<p>MM TRANS-3a: Prior to issuance of building permits, the 2018 Project applicant shall pay to the City of Pittsburgh its pro rata fair share of the cost to restripe the northbound approach of the West Leland Road at Oak Hills Drive intersection to provide separate left and right-turn lanes. Provided, however, that should BART development not occur, this improvement would not be necessary, and the 2018 Project applicant would not be required to pay the fees identified in this Mitigation Measure TRANS-3a. Development considered in the Pittsburgh/Bay Point BART Specific Plan included 1,168 dwelling units and 146,362 square feet of nonresidential</p>	<p>Significant unavoidable impact.</p>

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>uses in conjunction with site access and circulation improvements and parking.</p> <p>MM TRANS-3b: Prior to issuance of building permits, the 2018 Project applicant shall pay to the City of Pittsburg its pro rata fair share of the cost to construct a second eastbound left-turn lane. However, there is insufficient right-of-way available to construct this improvement. As it is uncertain if improvements could be constructed and identified improvements would not result in acceptable LOS E operations, this impact would remain <i>significant and unavoidable</i>. The project applicant previously paid transportation impact fees for improvements at this intersection associated with development of the entitled project.</p> <p>MM TRANS-3c: Prior to issuance of building permits, the 2018 Project applicant shall pay to the City of Concord its pro rata fair share of the costs to improve the intersection of Bailey Road/Myrtle Drive if and to the extent the City of Concord has, at the time of building permit issuance, lawfully established an impact fee to fund the foregoing improvements. The improvements shall consist of signalization of this intersection in conjunction with the construction of a southbound left-turn lane. Provided, however, this mitigation measure shall not apply if there is not a legal mechanism by which for the 2018 Applicant to provide fees to the City of Concord or if the City of Concord does not support the improvements, as reflected by the City of Concord’s lawful establishment of an impact fee to fund said improvements.</p> <p>MM TRANS-3d: Prior to issuance of building permits, the 2018 Project applicant shall pay to the City of Concord its pro rata fair share of the costs to improve the intersection of Bailey Road/Concord Boulevard if and to the extent the City of Concord has, at the time of building permit issuance, lawfully established an impact fee to fund the foregoing improvements. The improvements shall consist of installation of southbound right-turn overlap phase and retiming the traffic signal to allow such a movement. Provided, however, this mitigation measure shall not apply if there is not a</p>	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	legal mechanism by which for the applicant to provide fees to the City of Concord or if the City of Concord does not support the improvements, as reflected by the City of Concord’s lawful establishment of an impact fee to fund said improvements.	
Impact TRANS-4: The 2018 Project may conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.	MM TRANS-4: Prior to issuance of building permits, the 2018 Project applicant shall pay all adopted applicable regional transportation related impact fees in accordance with the latest fee schedule, including the ECCRFFA.	Significant unavoidable impact.
Impact TRANS-5: The 2018 Project may substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	MM TRANS-5a: Prior to issuance of the first building permit, the applicant shall demonstrate that the Alves Ranch Road extension into the project site is designed to Collector Street standards, and all other streets are designed to Local Street standards. MM TRANS-5b: Prior to the issuance of the first grading permit, the applicant shall demonstrate (as shown on the final improvement plans) provide a refuse collection plan to that each home has a clear refuse collection staging area that considers the need for some on-street parking to be provided on refuse collection days.	Less than significant impact.
Impact TRANS-6: The 2018 Project would not result in inadequate emergency access.	No mitigation is necessary.	Less than significant impact.
Impact TRANS-7: The 2018 Project may conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	MM TRANS-7a: Prior to issuance of building permits for the potential future commercial uses, the commercial project applicant shall prepare and submit plans to the City of Pittsburg demonstrating that a community kiosk is provided in a centrally located public space. The kiosk shall provide information about alternative modes of transportation including bicycling, walking, transit, and carpool programs or facilities. MM TRANS-7b: Prior to issuance of building permits for the potential future commercial uses, the commercial project applicant shall prepare and submit plans to the City of Pittsburg demonstrating that bicycle racks and	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>lockers or secure room bicycle parking is provided based on the requirements outlined in Section 18.78.045 of the Pittsburgh Municipal Code. Approximately 20 percent of the required bicycle parking shall be long-term parking for employee use.</p> <p>MM TRANS-7c: Prior to issuance of building permits for the 2018 Project, the residential project applicant shall demonstrate (as shown on final improvement plans) that it will either install signage and barricades prohibiting pedestrian crossing movements of West Leland Road at the new project roadway/Tomales Bay Drive on both the east and west legs of the intersection, or install a high visibility crosswalk with a pedestrian actuated flashing beacons or pedestrian hybrid signal across the west leg of the intersection and prohibit pedestrian crossings of the east leg through signage and barricades.</p>	

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SECTION 1: INTRODUCTION

1.1 - Overview of the CEQA Process

This Draft Supplemental Environmental Impact Report (Draft SEIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) Guidelines to evaluate the minor changes to the Alves Ranch Project originally analyzed in the Vista Del Mar EIR, State Clearinghouse No. 2004012097, certified on October 18, 2004. The original EIR consists of the following documents: the Draft EIR; the Response to Comments/Final EIR; and Resolution 04-10168, which certified the original EIR, made the required findings, approved the original Mitigation Monitoring and Reporting Program (MMRP) and approved and authorized the original Alves Ranch Project as part of the larger Vista Del Mar development. This original EIR consisting of the foregoing documents, collectively, is referred to herein as the “2004 EIR.” This supplemental document has been prepared in conformance with CEQA (California Public Resources Code [PRC] § 21000, *et seq.*) and the CEQA Guidelines (California Code of Regulations [CCR] Title 14, § 15000, *et seq.*). This Draft SEIR is intended to serve as an informational document for the public agency decision makers and the public regarding the 2018 Alves Ranch Project (2018 Project).

The proposed 2018 Project consists of the development of 346 dwelling units (as well as 10 accessory dwelling units) and the rezoning of approximately 12 acres of the project site for up to 140,000-square-foot of potential future neighborhood- and community-serving commercial uses on the approximately 57.81-acre project site. Section 2, Project Description, provides a complete description of the 2018 Project.

1.1.1 - Purpose and Authority

This Draft SEIR provides a project-level analysis of the environmental effects of the 2018 Alves Ranch Project. The environmental impacts of the 2018 Project are analyzed in the SEIR to the degree of specificity appropriate, in accordance with CEQA Guidelines Section 15146. In accordance with CEQA Guidelines Section 15163, this document addresses whether: (1) changes to the Alves Ranch Project; (2) a change in circumstances under which the original Alves Ranch Project was undertaken; or (3) new information of substantial importance exists, which would result in any new significant impacts or an increase in severity of previously identified significant impacts. It also identifies appropriate and feasible mitigation measures that, if adopted, may significantly reduce or avoid certain of these impacts.

CEQA requires that an EIR contain, at a minimum, certain specific elements. These elements are contained in this Draft SEIR and include:

- Table of Contents
- Introduction
- Executive Summary
- Project Description
- Environmental Setting, Significant Environmental Impacts, and Mitigation Measures
- Cumulative Impacts

- Significant Unavoidable Adverse Impacts
- Alternatives (reaffirming the validity of the Alternatives studied in the 2004 Final EIR)
- Growth-Inducing Impacts
- Effects Found not to be Significant
- Areas of Known Controversy

1.1.2 - Lead Agency Determination

The City of Pittsburg is designated as the lead agency for the 2018 Project. CEQA Guidelines Section 15367 defines the lead agency as “. . . the public agency, which has the principal responsibility for carrying out or approving a project.” Other public agencies may use this Draft SEIR in the decision-making or permit process and consider the information in this Draft SEIR along with other information that may be presented during the CEQA process.

This Draft SEIR was prepared by FirstCarbon Solutions (FCS), an environmental consultant at the lead agency’s direction. Prior to public review, it was extensively reviewed and evaluated by the City of Pittsburg. This Draft SEIR reflects the independent judgment and analysis of the City of Pittsburg as required by CEQA. Lists of organizations and persons consulted and the report preparation personnel is provided in Section 8 of this Draft SEIR.

1.2 - Scope of the EIR

The Alves Ranch Project was originally analyzed and approved in 2004 pursuant to the certified 2004 EIR. The certified 2004 EIR identified the following potentially significant and unavoidable impacts:

- Cumulative visual effects associated with an existing PG&E transmission line and associated towers;
- Cumulative transportation-related impacts to local intersections, including Bailey Road/West Leland Road, Bailey Road/Concord Boulevard, and Bailey Road/Myrtle Drive;
- Cumulative impacts to State Highway 4;
- Cumulative impacts related to BART parking;
- Cumulative impacts related to municipal water service demand;
- Impacts related to possible demolition of historic resources;
- Project construction noise;
- Cumulative impacts on regional air emissions.

The City adopted a Statement of Overriding Considerations prior to approving the original Alves Ranch Project. When a lead agency decides to approve a project that will cause one or more significant environmental effects, the lead agency prepares a statement of overriding considerations that reflects the ultimate balancing of competing public objectives (including environmental, legal, technical, social, and economic factors).

CEQA includes a presumption against requiring any further environmental review once an EIR has been prepared and certified for a project. Section 21166 of the Public Resources Code provides that “no subsequent or supplemental environmental impact report shall be required by the lead agency or any responsible agency” unless one of three circumstances apply:

- (1) Substantial changes to the approved project will require major revisions to the certified EIR,
- (2) substantial changes occur with respect to the circumstances under which the approved project is being undertaken will require major revisions to the certified EIR, or
- (3) new information, that was not known and could not have been known at the time the EIR for the approved project was certified becomes available.¹

The factors used to evaluate whether a subsequent or a supplemental EIR should be prepared are set forth in CEQA Guidelines 15162 and 15163 and relate to whether “substantial changes” to the EIR are required. As identified in CEQA Guidelines Section 15162, substantial changes to the EIR are those that are required:

1. Due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.
2. Where mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative, or
3. Where mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Section 15163 of the CEQA Guidelines provides that the City may choose to prepare a supplement to an EIR rather than a subsequent EIR if any of the conditions described in Section 15162 would require the preparation of a subsequent EIR, but only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation.² Section 15163 further explains that:

1. The supplement to the EIR need contain only the information necessary to make the previous EIR adequate for the project as revised.
2. A supplement to an EIR shall be given the same kind of notice and public review as is given to a draft EIR under Section 15087.

¹ The California Supreme Court has noted that the foregoing “...limitations are designed to balance CEQA’s central purpose of promoting consideration of the environmental consequences of public decisions with interests in finality and efficiency.” *Friends of the College of San Mateo Gardens v. San Mateo County Community College Dist.*, 1 Cal 5th 937.949 (2016).

² An agency’s discretionary decision to prepare a supplemental EIR rather than a subsequent EIR is subject to a reasonableness standard, with the focus on the “substance of the EIR, not its nominal title.” *City of Irvine v. County of Orange*, 238 Cal. App. 4th 526, 540 (2015).

3. A supplement to an EIR may be circulated by itself without recirculating the previous draft or final EIR.
4. When the agency decides whether to approve the project, the decision-making body shall consider the previous EIR as revised by the supplemental EIR. A finding under Section 15091 shall be made for each significant effect shown in the previous EIR as revised.

In evaluating whether changes to the 2018 Project as currently proposed would result in new significant environmental impacts or an increase in severity of previously identified significant impacts, this Draft SEIR considers the incremental difference between the previously approved project as evaluated in the 2004 SEIR and the proposed 2018 Project.³ In accordance with Section 15163 of the CEQA Guidelines, this Draft SEIR:

- Incorporates the certified 2004 EIR, and the entire administrative record related thereto, by reference.
- Contains information necessary to make the 2004 EIR adequate for the 2018 Project.
- Evaluates the potential environmental impacts of the changes to the 2018 Project.
- Updates, where necessary, information relating to the resources in the vicinity of the project site that may be affected by the 2018 Project.

The proposed changes are summarized in the Project Description of this Draft SEIR. Based on the Initial Study prepared for the 2018 Project, the City determined that a supplemental EIR was appropriate. This Draft SEIR supplements the analysis presented in the 2004 EIR in accordance with applicable laws and regulations, including a description of the proposed modifications of the 2018 Project, as well as addressing any changed circumstances, and an evaluation of the potential to generate significant impacts not disclosed in the 2004 EIR. It contains sufficient information necessary to make the 2004 EIR adequate for the 2018 Project as revised. The 2004 EIR, which includes the findings and the MMRP adopted in connection with the 2004 EIR, is also available for reference at City of Pittsburg, Planning Division, 65 Civic Avenue, Pittsburg, CA 94565. The analysis in this Draft SEIR confirms that the certified 2004 EIR is adequate for the 2018 Project for purposes of CEQA, with the updated information contained herein.

The City of Pittsburg issued a Notice of Preparation (NOP) for the proposed 2018 Project on December 18, 2018, which circulated between December 18, 2018 and January 17, 2019, for the statutory 30-day public review period. The scope of this Draft SEIR includes the potential environmental impacts identified in the NOP and issues raised by agencies and the public in response to the NOP as determined appropriate by the City. The NOP is contained in Appendix A of this Draft SEIR.

³ The CEQA Guidelines state that a supplement to an EIR need only contain the information necessary to make the previous EIR adequate for the project as revised. CEQA Guidelines § 15163(b).

Seven comment letters were received in response to the NOP, as well as one person who provided verbal comments at the scoping meeting. They are listed in Table 1-1 and provided in Appendix A of this Draft SEIR.

Table 1-1: NOP Comment Letters

Agency/Organization	Author	Date
Public Agencies		
Contra Costa Water District	Christine Schneider	January 9, 2019
California Department of Oil and Gas	Charlene L. Wardlow	January 14, 2019
California Governor’s Office of Planning and Research (OPR)	Scott Morgan	December 20, 2018
Native American Heritage Commission (NAHC)	Sharaya Souza	December 27, 2018
California Dept. of Transportation (Caltrans)	Patricia Maurice	January 17, 2019
Contra Costa County Fire Protection District	Toss Schiess	January 4, 2019
Individuals		
—	Bruce “Ole” Ohlson	January 9, 2019
Letters received outside of the comment period		
Hanson Bridgett LLP	Kristina Lawson	January 18, 2019
Contra Costa County Public Works	Jorge Hernandez	January 22, 2019
California Department of Fish and Wildlife	Greg Erickson	January 23, 2019
Federal Emergency Management Agency (FEMA)	Gregor Blackburn	January 31, 2019
Source: City of Pittsburg 2019		

1.2.1 - Scoping Meeting

Pursuant to CEQA Guidelines Section 15082(c)(1), the City of Pittsburg held a public scoping meeting for the proposed 2018 Project on Wednesday, January 9, 2019, in the Pittsburg Council Chambers, Pittsburg City Hall, 65 Civic Avenue, Pittsburg, CA 94565. One person, Bruce Ohlson, attended and provided verbal comments.

1.2.2 - Environmental Issues Determined not to be Significant

An Initial Study was prepared to determine the issues that would require further study in the Draft SEIR and identify individual topical areas that were determined not to be significant and not warranting further review. The Initial Study is provided in Appendix A. Based on the analysis provided in the Initial Study and as further supported by the administrative record, the following specific issues are not further analyzed in this Draft SEIR:

- Aesthetics
- Agriculture and Forestry Resources

- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities

1.2.3 - Potentially Significant Environmental Issues

The NOP found that the following topical areas may contain potentially significant environmental issues that will be further analyzed in the Draft SEIR. These sections are as follows:

- Air Quality
- Biological Resources
- Greenhouse Gas Emissions
- Noise
- Transportation

1.3 - Organization of the SEIR

This Draft SEIR is organized into the following main sections:

- **Section ES: Executive Summary.** This section includes a summary of the proposed 2018 Project and alternatives that are evaluated in the Draft SEIR. A brief description of any areas of controversy and issues to be resolved, and an overview of the updated MMRP, in addition to a table that summarizes the impacts, mitigation measures, and level of significance after mitigation, are also included in this section.
- **Section 1: Introduction.** This section provides an introduction and overview describing the purpose of this Draft SEIR, its scope and components, and its review and certification process.
- **Section 2: Project Description.** This section includes a detailed description of the proposed 2018 Project, including its location, site, and project characteristics. A discussion of the project objectives, intended uses of the Draft SEIR, responsible and trustee agencies, and discretionary approvals that are needed for the proposed 2018 Project are also provided.
- **Section 3: Environmental Impact Analysis.** This section analyzes the environmental impacts of the proposed 2018 Project. Impacts are organized into major topic areas. Each topic area includes a description of the environmental setting, methodology, significance criteria, impacts, mitigation measures, and significance after mitigation. The specific environmental topics that are addressed within Section 3 are summarized as follows:

- **Section 3.1—Air Quality:** Addresses the potential air quality impacts associated with project implementation, as well as consistency with the Bay Area Air Quality Management District Clean Air Plan.
- **Section 3.2—Biological Resources:** Addresses the 2018 Project’s potential impacts on habitat, vegetation, and wildlife; the potential degradation or elimination of important habitat; and impacts on listed, proposed, and candidate threatened and endangered species.
- **Section 3.3—Greenhouse Gas Emissions:** Addresses and evaluates project emissions of greenhouse gases.
- **Section 3.4—Noise:** Addresses the potential noise impacts during construction and at project buildout from mobile and stationary sources. The section also addresses the impact of noise generation on neighboring uses.
- **Section 3.5—Transportation and Traffic:** Addresses the impacts on the local and regional roadway system, public transportation, bicycle, and pedestrian access.
- **Section 4: Cumulative Effects.** This section discusses the cumulative impacts associated with the proposed 2018 Project, including the impacts of past, present, and probable future projects.
- **Section 5: Alternatives to the Proposed Project.** This section evaluates whether changes to the 2018 Project (and/or changes in the circumstances surrounding the 2018 Project) would require additional evaluation, either in terms of the alternatives considered and/or the comparative assessment between the identified alternatives and the 2018 Project, with the focus being on the incremental difference between what was previously studied in the 2004 Final EIR and the proposed 2018 Project.
- **Section 6: Other CEQA Considerations.** This section provides a summary of significant environmental impacts, including unavoidable and growth-inducing impacts. This section discusses the cumulative impacts associated with the proposed 2018 Project, including the impacts of past, present, and probable future projects. In addition, the proposed 2018 Project’s energy demand is discussed.
- **Section 7: Persons and Organizations Consulted/List of Preparers.** This section also contains a list of persons and organizations that were consulted during the preparation of this Draft SEIR. This section also contains a list of the authors who assisted in the preparation of the Draft SEIR, by name and affiliation.
- **Section 8: References.** This section contains a list of references that were used in the preparation of this Draft SEIR.
- **Appendices.** This section includes all notices and other procedural documents pertinent to the Draft SEIR, as well as relevant technical material prepared to support the analysis.

1.4 - Documents Incorporated by Reference

As permitted by CEQA Guidelines Section 15150, this Draft SEIR has referenced numerous technical studies, analyses, and previously certified environmental documentation. Information from these documents, which have been incorporated by reference, has been briefly summarized in the appropriate section(s). The relationship between the incorporated part of the referenced document

and the Draft SEIR has also been described. The documents and other sources that have been used in the preparation of this Draft SEIR include but are not limited to:

- 2004 EIR and entire administrative record
- City of Pittsburg General Plan
- Pittsburg Municipal Code

These documents are specifically identified in Section 9, References, of this Draft SEIR. In accordance with CEQA Guidelines Section 15150(b), the General Plan, Municipal Code, and the 2004 EIR and related administrative record used in the preparation of the Draft SEIR are available for review at the City of Pittsburg City Hall at the address shown in Section 1.6 below.

1.5 - Documents Prepared for the Project

The following technical studies and analyses were prepared in connection with the Draft SEIR for the proposed 2018 Project to supplement the 2004 EIR:

- Air Quality Analysis, prepared by FCS (analysis is wholly contained in Section 3.1, Air Quality); Modeling output provided in Appendix B.
- Biological Resources, prepared by FCS (analysis is wholly contained in Section 3.2, Biological Resources); Supporting information provided in Appendix C.
- Greenhouse Gas Emissions Analysis, prepared by FCS (analysis is wholly contained in Section 3.3, Greenhouse Gas Emissions); Modeling output provided in Appendix B.
- Noise Analysis, prepared by FCS (analysis is wholly contained in Section 3.4, Noise); Modeling output provided in Appendix D.
- Transportation Impact Assessment, prepared by Fehr & Peers. The report is provided in Appendix E.

1.6 - Review of the Draft SEIR

Upon completion of the Draft SEIR, the City of Pittsburg filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (PRC § 21161). Concurrent with the NOC, this Draft SEIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft SEIR in accordance with Public Resources Code 21092(b)(3). During the public review period, the Draft SEIR, including the technical appendices, is available for review at the City of Pittsburg. The address for each location is provided below:

City of Pittsburg
Community Development Department
65 Civic Avenue
Pittsburg, CA 94565

Pittsburg Library
80 Power Avenue
Pittsburg, CA 94565

Hours:

Tuesday: 12:00 p.m. to 8:00 p.m.

Wednesday: 10:00 a.m. to 6:00 p.m.

Thursday: 1:00 p.m. to 8:00 p.m.

Friday/Saturday: 11:00 a.m. to 5:00 p.m.

Agencies, organizations, and interested parties have the opportunity to comment on the Draft SEIR during the 45-day public review period. Written comments on this Draft SEIR should be addressed to:

Jordan Davis, Senior Planner
City of Pittsburg
Community Development Department
65 Civic Avenue
Pittsburg, CA 94565
Phone: 925.252.4015
Email: jdavis@ci.pittsburg.ca.us

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to all significant environmental issues raised will be prepared and made available for review by the commenting agencies and the public at least 10 days prior to the public hearing before the City Council on the 2018 Project, at which the certification of the Final SEIR will be considered. Comments received and the responses to comments will be included as part of the record for consideration by decision makers for the 2018 Project.

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SECTION 2: PROJECT DESCRIPTION

This Draft Supplemental Environmental Impact Report (Draft SEIR) analyzes the potential environmental effects of the 2018 Alves Ranch Project (2018 Project) in the City of Pittsburg.

2.1 - Project Location and Setting

2.1.1 - Location

The project site is located in the City of Pittsburg, in Contra Costa County, California; refer to Exhibit 2-1. The approximately 57.81-acre project site is bounded by a single-family residential neighborhood (Toscana at San Marco) (west), State Route 4 (SR-4)(north), undeveloped land (east), and West Leland Road (south); refer to Exhibit 2-2. The project site is located approximately 2 miles south of the Honker Bay, California United States Geological Survey 7.5-Minute Topographical Quadrangle Township 2 North, Range 1 West, Section 15 (Latitude 38° 1' 10" North; Longitude 121° 57' 29" West).

2.1.2 - Existing Conditions

The project site contains flat relief and is undeveloped. The project site was utilized for agricultural uses in the past and has been disturbed by grading in connection with the previously approved tentative subdivision map (which was approved in 2004 as part of the larger Vista Del Mar development) and is routinely disked for weed abatement purposes. An old plow sits near the intersection of West Leland Road/Alves Ranch Road.

The project site sits on a raised “shelf” approximately 20 feet above SR-4 to the north. A stormwater basin is located in the northeastern corner of the project site adjacent to SR-4. This basin is at a lower elevation than the shelf. An unpaved access road provides vehicular access to the basin from the project site.

Exhibit 2-3 provides photographs of the project site.

2.1.3 - Surrounding Land Uses

West

The Toscana at San Marco neighborhood is located west of the project site. This neighborhood consists of single-family residences constructed in the mid-2010s. A block wall separates the Toscana neighborhood from the project site. There is a greater grade differential existing at the southwest corner of the project site where a 6-foot tall wooden fence above an approximately 10-foot retaining wall separates the two projects. The recently completed Ray Giacomelli Community Park is also located approximately 900 feet west of the project site, on the south side of West Leland Road.

North

SR-4, a multi-lane freeway that spans Contra Costa County from east to west, forms the northern boundary of the project site. Within the center median of SR-4 is the San Francisco Bay Area Rapid

Transit (BART) rail line, which consists of two parallel tracks. Beyond SR-4 is the unincorporated community of Bay Point as well as the Bay Point Regional Shoreline, and Suisun Bay.

East

East of the project site is approximately 23.4 acres of undeveloped land separated from the project site by a large soil pile that straddles the boundary shared by the project site and this adjacent land. Beyond this adjacent area is the Pittsburg/Bay Point BART Station, parking lot, and more vacant land owned by BART. This area is part of the Pittsburg/Bay Point BART Master Plan, adopted in 2011, which calls for a mixture of medium- and high-density residential development, as well as commercial and open space development. In addition, the Keller Canyon Landfill is located approximately 1.5 miles to the southeast of the project site.

The Oak Hills Shopping Center, which represents the nearest existing commercial shopping opportunity, is located nearly 0.5 mile from the project site.

South

West Leland Road, a four-lane divided arterial that spans nearly the entire City from east to west, forms the southern boundary of the project site. South of West Leland Road is the Vista Del Mar single-family neighborhood, constructed within the last decade, which includes an approximately 11-acre site for development of a future school operated by the Mount Diablo Unified School District (MDUSD). In addition, a Pacific Gas & Electric (PG&E) transmission line easement is located approximately 1,200 feet to the south of the project site.

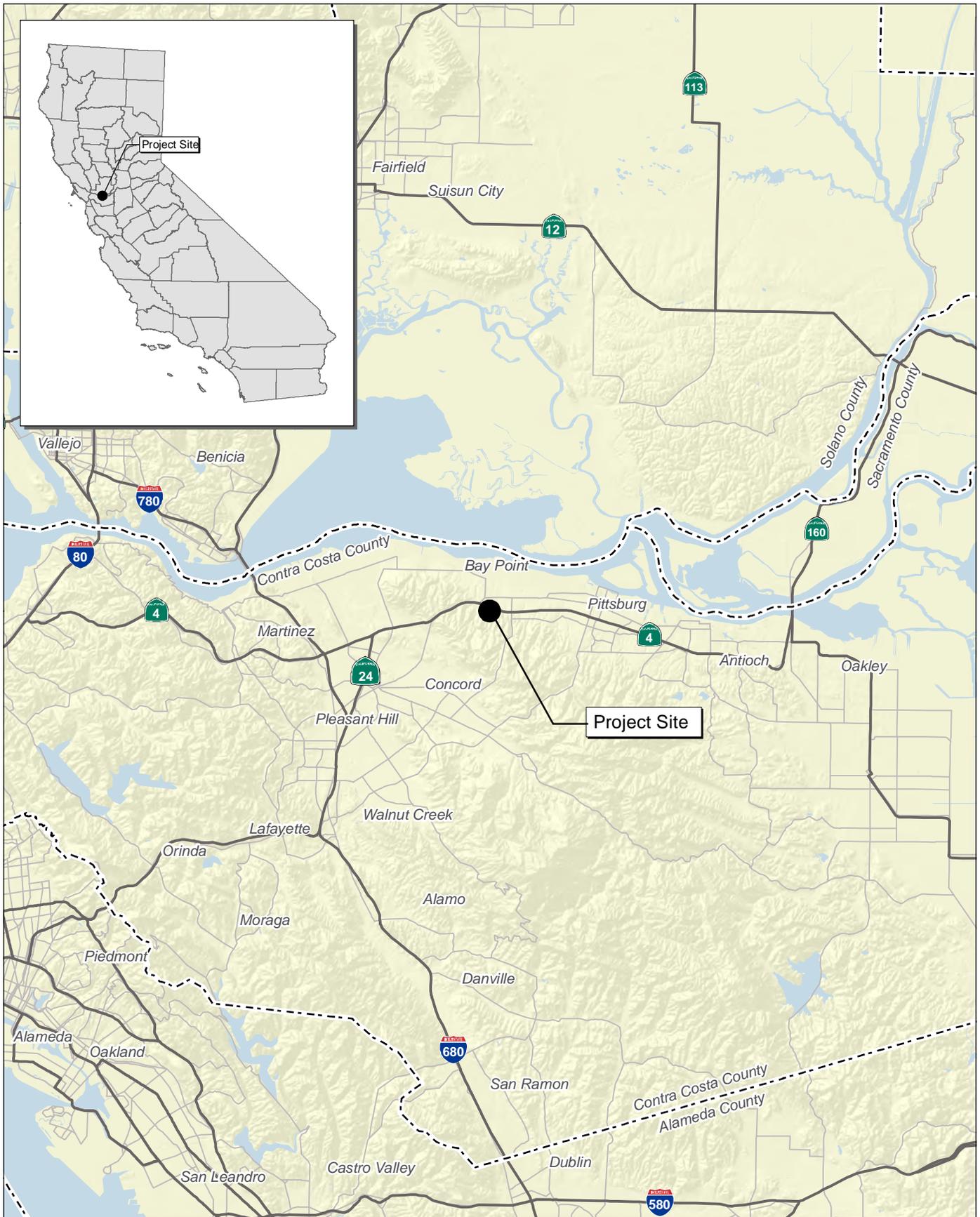
2.1.4 - Land Use Designations and Zoning

In 2001, the City of Pittsburg adopted a comprehensive General Plan Update designating the project site for future development with a mix of open space, residential, and commercial uses. Specifically, the 2001 General Plan and its accompanying certified EIR anticipated development in Alves Ranch as follows (General Plan Policy 2-P-89):

- Up to 306 Hillside Low- and Low-Density units, and 794 Medium and High-Density residential units; and,
- Up to 20 acres of Business Commercial between West Leland Road and SR-4.

As such, the western half of the project site has a current General Plan Land Use designation of, “Business Commercial,” while the eastern half is designated, “High Density Residential” (Exhibit 2-6).

The western third of the project site is zoned CO-P District (Office Commercial with a Master Plan Overlay, Ordinance No. 04-1230), and the remaining two-thirds of the project site is zoned RH-P District (High-Density Residential with a Master Plan Overlay, Ordinance No. 04-1230) (Exhibit 2-7).



Source: Census 2000 Data, The CaSIL.

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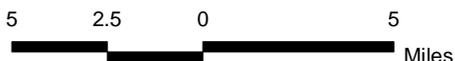


Exhibit 2-1 Regional Location Map

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Legend

Project Site

Source: ESRI Aerial Imagery.

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Exhibit 2-2
Local Vicinity Map
Aerial Base

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Photograph 1: View of project site from W. Leland Road / Future West Access Road.



Photograph 2: View of project site from W. Leland Road / Alves Ranch Road.

Source: FirstCarbon Solutions, 2018.

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2.2 - Project History

The project site was originally part of a larger property purchased in 1917 by Virginia Alves for use as a cattle ranch and grazing land. The larger property served many purposes over the years, including manufacturing, commercial, and ranching endeavors.

The project site (along with other adjacent land) has long been planned for urbanization and development with residential, commercial, and open space uses, and therefore has been through several rounds of entitlements and environmental review dating back to the late 1980s. Each round is summarized as follows:

2.2.1 - Southwest Hills General Plan Amendment and Boundary Reorganization (1987–1990)

On August 3, 1987, the Pittsburg City Council certified an EIR for the Southwest Hills General Plan Amendment and Boundary Reorganization (Resolution 87-7209). The acreage included in the reorganization area encompassed approximately 2,570 acres (including the project site) located south of SR-4 and west of Bailey Road, just outside of the then Pittsburg City limits. The City Council approved submittal of applications for the property-owner initiated reorganization (which included inclusion into the City's sphere of influence and municipal boundary, as well as the boundaries of the Contra Costa Water District and Delta Diablo Sanitation District) with adoption of Resolutions 87-7204 and 87-7205 on August 7, 1987.

On September 6, 1988, the City Council adopted Resolution 88-7357 comprehensively updating the City's General Plan. With the exception of a shopping center located on the southwest quadrant of SR-4 and Bailey Road, all of the acreage within the Southwest Hills Boundary Reorganization Area was designated with residential or open space land use designations on the General Plan land use diagram.

On April 3, 1990, the City Council adopted Ordinance 90-990, thereby adopting a Negative Declaration and authorizing execution of the Southwest Development Agreement (DA). The Southwest DA allowed construction of 2,938 residential units on 639 acres within the previously referenced Southwest Hills Boundary Reorganization Area west of the project site.

2.2.2 - Vista Del Mar Project (2004)

In 2004, William Lyon Homes, Inc., and Alves Ranch, LLC, submitted a plan to develop approximately 293 acres of the Alves property as a residential and commercial subdivision, known as the Vista Del Mar development. The 2004 Vista Del Mar project's development program anticipated approximately 1,100 housing units, 257,500-square-feet of commercial floor space, an 11.33-acre school/park site, 117.68 acres of permanent hillside open space, associated landscaped buffers, public and private roadways, a detention basin, a water tank site, and a water pump station site. The City prepared an EIR (2004 EIR; State Clearinghouse Number [SCN] 2004012097) to analyze the potential environmental impacts associated with the Vista Del Mar development.

As part of the overall development program analyzed as part of the Vista Del Mar project, the 2004 EIR contemplated high density residential and business commercial land uses, as well as a regional stormwater basin, on the approximately 57.81-acre portion of the Alves property north of West Leland Road (i.e., the “project site”). The 2004 EIR assumed that this northern portion of the Vista Del Mar development would include 563 housing units on 32.1 acres and 257,500 square feet of commercial building space on 14.78 acres, along with the aforementioned 7-acre stormwater basin site.

On October 18, 2004, the City Council adopted Resolution No. 04-10168, certifying the 2004 Final EIR for the Vista Del Mar development. On November 29, 2004, the City adopted Resolution No. 04-10191, approving CEQA findings and adopting a Statement of Overriding Considerations and a Mitigation, Monitoring and Reporting Program, as well as Resolution No. 04-10192, amending the General Plan land use map and Policy 2-P-88 to change the distribution of residential densities within the Vista Del Mar development area. On December 6, 2004, the City Council adopted Ordinance No. 04-1230, authorizing execution of a development agreement for the Vista Del Mar project area, as well as rezoning the portion of the Vista Del Mar site south of West Leland Road to PD (Planned Development) District and the Alves property north of West Leland Road to a combination of CO-P and RH-P Districts.

2.2.3 - First Amendment to Development Agreement (2005)

On May 13, 2005, William Lyon Homes, Inc., Alves Ranch, LLC, and the City executed an amendment to the previously approved Development Agreement, related to the manner in which the Developer would be required to fully satisfy its parkland dedication or improvement obligations. While the Developer had initially requested that the City consider a joint use park within the Project Site, the arrangement was determined to be infeasible, and the City and Developer agreed that requiring the Developer to pay in lieu parkland dedication fees would provide greater overall park and recreational benefits to the City’s residents. This First Amendment to the Development Agreement was processed as an Administrative Agreement Amendment pursuant to and in compliance with Section 7.02(a) of the Development Agreement, which authorized the use of Administrative Agreement Amendments where minor changes to the Agreement did not substantially affect specified items.

2.2.4 - Second Amendment to Development Agreement (2006)

On June 26, 2006, William Lyon Homes, Inc., Alves Ranch, LLC, and the City executed a Second Amendment to the previously approved Development Agreement, related to minor changes to Sections 3.10, 3.02(b), 3.02(d), 4.09, 5.06, and 6.11 of the Development Agreement, related to costs of the Southwest Hills Water Improvements, William Lyon Homes Inc.’s parkland dedication fee obligations, and the manner in which Developer would be required to fully satisfy its obligations with respect to the Vista Del Mar project’s participation in certain lighting and landscaping districts established by the City. This Second Amendment to the Development Agreement was processed as an Administrative Agreement Amendment pursuant to and in compliance with Section 7.02(a) of the Development Agreement, which authorized the use of Administrative Agreement Amendments where minor changes to the Agreement did not substantially affect specified items.

2.2.5 - Alves Ranch Addendum No. 1 and 2009 Revised Project (2008–2009)

In August 2008, a revised development plan was proposed for the approximately 57.81-acre portion of the 2004 Vista Del Mar development located north of West Leland Road (i.e., the “project site”). These changes contemplated development of up to 478 total residential units, comprised of 308 multi-family units (including 93 affordable housing units), and 170 single-family detached units on 31.7 acres. The plan also contemplated 221,500-square-feet of commercial floor space on approximately 14 acres. The 2008 development plan required the approval of: (1) a rezoning to establish a Master Plan Overlay District; (2) a vesting tentative subdivision map; and (3) design review. An Addendum to the previously certified 2004 EIR (“2008 Addendum”) was prepared to analyze whether the proposed changes were adequately addressed in the 2004 EIR. The 2008 Addendum concluded that the revised development plan would contribute to eight of the nine significant unavoidable impacts identified in the 2004 EIR; however, none of the significant unavoidable impacts involved a new significant impact or a more severe significant impact than those previously identified and addressed in the statement of overriding considerations accompanying the 2004 EIR.

The City and the applicant continued to refine the revised development plan, making minor changes to the site plan and project design. On January 20, 2009, the City Council adopted Ordinance No. 08-1312, adopting an EIR Addendum and approving a master plan for the project site. The approved Master Plan ultimately anticipated the development of up to 560 housing units (more than originally anticipated in the 2008 revised plan, but a slight decrease from the 563 units analyzed in the 2004 FEIR), a 0.6-acre recreational facility, and 221,500-square-feet of commercial floor area (a slight decrease from the originally approved 257,000-square-feet analyzed in the 2004 EIR) (“2009 Project”).

2.2.6 - Third Amendment to Development Agreement (2010)

On September 8, 2010, William Lyon Homes, Inc., Alves Ranch, LLC, and the City executed a Second Amendment to the previously approved Development Agreement, related to minor changes related to the timing for Alves Ranch LLC to enter into the required affordable housing agreement. The Third Amendment to the Development Agreement did not alter the obligations of the Developer related to the location or number of affordable units required, nor the timing of the development. This Third Amendment to the Development Agreement was processed as an Administrative Agreement Amendment pursuant to and in compliance with Section 7.02(a) of the Development Agreement, which authorized the use of Administrative Agreement Amendments where minor changes to the Agreement did not substantially affect specified items.

2.2.7 - Vista Del Mar Addendum No. 2 and 2012 Vista Del Mar Project (2012)

In 2012, the City adopted a second addendum to the 2004 EIR that analyzed a request to amend the General Plan designations of approximately 20.4 acres of land within the Vista Del Mar development, south of West Leland Road from “Low Density Residential,” and “Hillside Low Density Residential,” to “Open Space,” and also amended the adopted PD Plan (PD 04-1230) to reflect the changes of the two locations from “Single Family Residential” and “Estate Lots” to “Open Space.” These land use changes, however, did not involve any portion of the project site.

These areas were subsequently included in the Geological Hazard Abatement District (GHAD) established to address and appropriately mitigate the identified geotechnical hazards within the Vista Del Mar development area. The City prepared a second addendum (“2012 Addendum”) in accordance with CEQA for the foregoing revisions to the Vista Del Mar development.

2.3 - Project Characteristics

2.3.1 - Proposed Project

The 2018 Alves Ranch Project (2018 Project) consists of the development of 346 single-family dwelling units and 10 accessory dwelling units on approximately 25.93 acres and the rezoning of approximately 12 acres of the project site for up to 140,000-square-foot of future neighborhood- and community-serving commercial uses. The 2018 Project also proposes to relocate the commercial uses to the center of the project site, with residential uses to be located on the northern, eastern, and western edges. Table 2-1 summarizes the 2018 Project. Exhibit 2-4 depicts the site plan, and Exhibit 2-5 depicts the conceptual landscaping plan, and Exhibit 2-6 and Exhibit 2-7 depict the existing and proposed General Plan land use designations and zoning.

Table 2-1: 2018 Alves Ranch Project Summary

Use	Acres (approx.)	Characteristics
Residential	25.93	346 single-family attached and detached units; 10 accessory units (356 total dwelling units)
Commercial	12.00	Assumed 140,000-square-foot of future commercial development
Open Space and Trails	2.18	0.9-acre Class I bicycle and pedestrian facility; 1.28 acres of recreation and/or landscaped open space
Storm Drainage	7.00	Existing outfall would be raised by 2 feet to yield 6.2 acre-feet of storage capacity
Undeveloped Areas	10.70	Comprised primarily of sloped areas not suitable for development

Source: William Lyon Homes 2018.

Residential

Residential uses would consist of single-family detached and attached units, with an overall density of approximately 14 units per acre. Exhibit 2-8a through Exhibit 2-8c depicts typical elevations for the proposed residential units. Units would be broken down into three distinct neighborhoods:

- Neighborhoods A-1 and A-2 would be located along the northern and eastern sides of the development, and would consist of 136 “duet” units. Each duet would be designed to mimic one single-family detached home but would provide two separate units with a shared wall. Entrances to the individual units would be placed on differing facades accessed by pedestrian-only walkways between each unit, and would be provided two separate two-car garages accessible via a shared driveway;

- Neighborhood C would provide 110 alley-loaded detached units. Each unit in Neighborhood C would include a two-car garage accessible from an alley, street, or driveway, and a front door on the opposing façade, accessible via a pedestrian-only walkway. Each unit would also include an expanded side yard area for private open space;
- Neighborhood D would provide the largest homes and would provide 100 traditional detached dwelling units with two-car garages. Ten of the proposed units in Neighborhood D would include income-restricted accessory dwelling units.

Overall, the 2018 Project includes a total of 214 fewer housing units and a lower overall residential density compared to the 2009 approval. The location of residential uses would be adjusted, as compared to the location identified in the 2004 EIR and the 2009 approval. This change would improve circulation, site accessibility, and compatibility with neighboring residential uses.

Commercial

Similar to the 2009 Project, the 2018 Project involves the rezoning of approximately 12 acres of the project site for up to 140,000-square-feet of potential future neighborhood- and community-serving commercial uses, including various retail, restaurant, and other neighborhood-serving commercial uses. The commercial use zoning would be relocated from the western side to the center of the project site, with roads, driveways, and other circulation details and locations modified to accommodate this revision.

Based on an analysis of existing shopping centers in the region, the anticipated type of development on the parcel, and off-street parking and loading space requirements for the City of Pittsburg, the developer has approximated that in a potential development scenario, a maximum total of 140,000-square-feet of commercial floor area could be developed on the 12-acre parcel. Pursuant to a memorandum of agreement executed by the developer, property owner, and City, these uses would be required to include an approximately 40,000-square-foot grocery store, or otherwise pay a penalty to the City.

Open Space

The 2018 Project would include approximately 1.28 acres of recreation and/or landscaped open space.

Trails

The 2018 Project would include an approximately 0.9-acre Class I bicycle and pedestrian facility, consisting of a 12-foot wide paved path along the West Leland Road frontage.

Wet Utilities

The City of Pittsburg would provide potable water service to the 2018 Project. Delta Diablo Sanitation District would provide wastewater collection and treatment to the 2018 Project.

Dry Utilities

Marin Clean Energy would provide electricity service to the proposed 2018 Project. PG&E would provide transmission of electricity.

PG&E would provide natural gas service to the 2018 Project.

Storm Drainage

The 2018 Project would install a storm drainage and conveyance system consisting of inlets and underground piping that would convey runoff to the existing regional stormwater basin located within the northern portion of the project site.

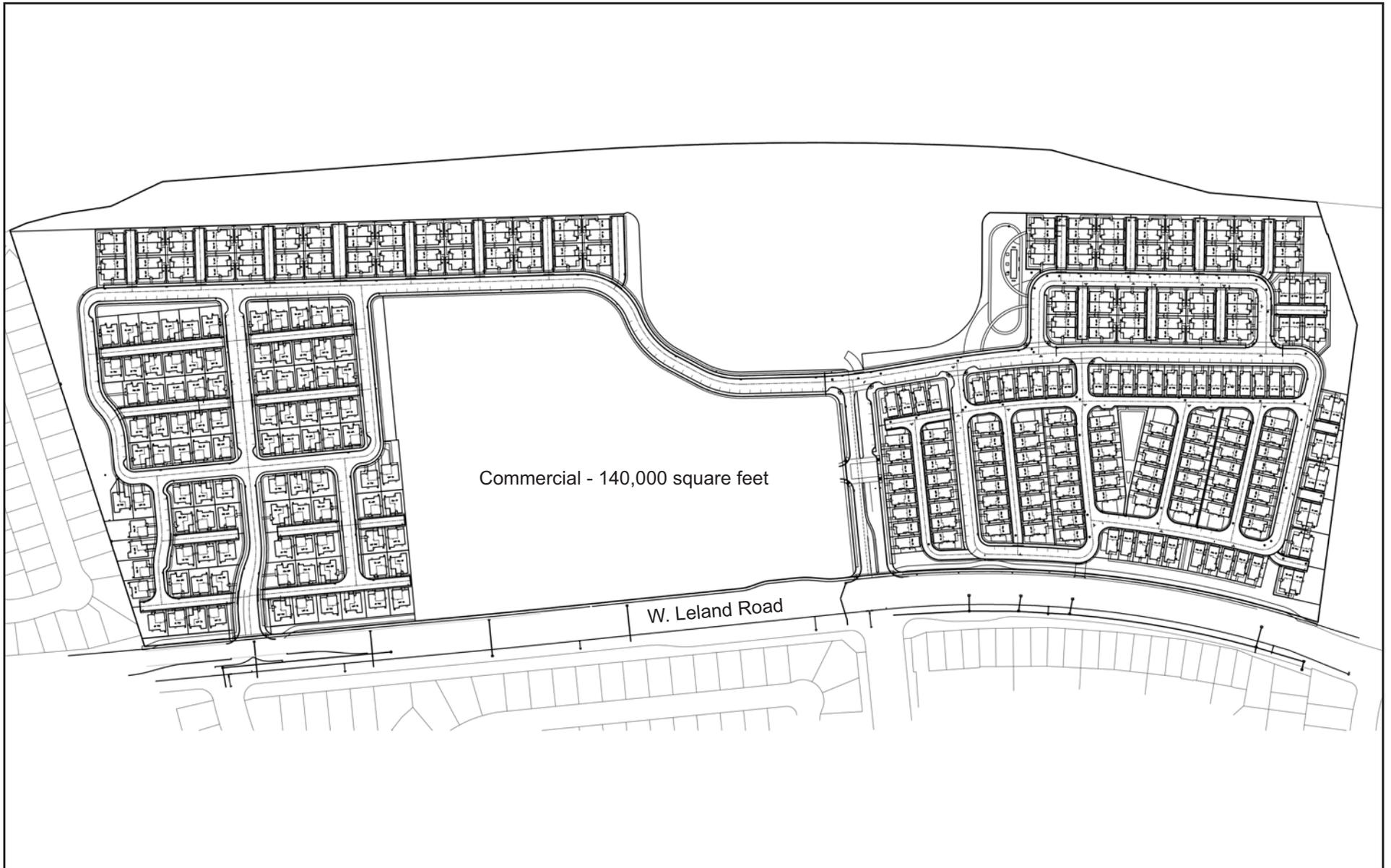
The City of Pittsburg is a “Permittee” under the California Regional Water Quality Control Board for the San Francisco Bay Region’s National Pollutant Discharge Elimination System (NPDES) Municipal Regional Stormwater Permit (MRP) (NPDES Permit No. CAS612008), implemented through the Contra Costa Clean Water Program (CCCWP). The California Regional Water Quality Control Board for the San Francisco Bay Region issued the first MRP in 2009; the MRP was reissued in November 2015.

Provision C.3 in the 2015 MRP requires site designs for new developments and redevelopments to minimize the area of new roofs and paving and treat runoff, and in some cases, control the rates and durations of site runoff.

Pursuant to MRP Order No. R2-2015-0049, “Attachment A: Fact Sheet,” issued November 19, 2015, Provision C.3.b (“Regulated Projects”), regulated projects with previously approved non-low impact development (LID) stormwater treatment measures that comply with the hydraulic sizing criteria of Provision C.3.d that have begun construction will continue to be “grandfathered,” or only required to comply with the Provision C.3 requirements in place at the time the project was originally approved (MSR, Attachment A, page A-34). Further, this provision allows exemptions for some of these previously approved projects in situations where the Permittees lack legal authority to retroactively change their previous approval.

The 2004 Project included a C.3 plan with non-LID stormwater treatment measures that was previously approved, in compliance with the MRP in effect at the time of project approval and the hydraulic sizing criteria of Provision C.3.d(1) of the Stormwater C.3 Guidebook, and construction was initiated as part of the Vista Del Mar single-family residential subdivision to the south. Additionally, the City has previously entered into a Development Agreement with William Lyon Homes and Alves Ranch, LLC, which vested the developers’ right to construct the “project,” inclusive of modifications and necessary subsequent approvals.

In order to treat the additional post-development runoff, and in compliance with the hydraulic sizing design criteria that the stormwater treatment systems installed for regulated projects identified within MRP Order No. R2-2015-0049, “Attachment A: Fact Sheet,” Provision C.3.d, the 2018 Project as well as the existing runoff from the Vista Del Mar project, the existing water quality storage volume of the basin is proposed to be increased from 5-acre-feet to 6.2 acre-feet.



Source: WHA Architects, Planners, Designers.



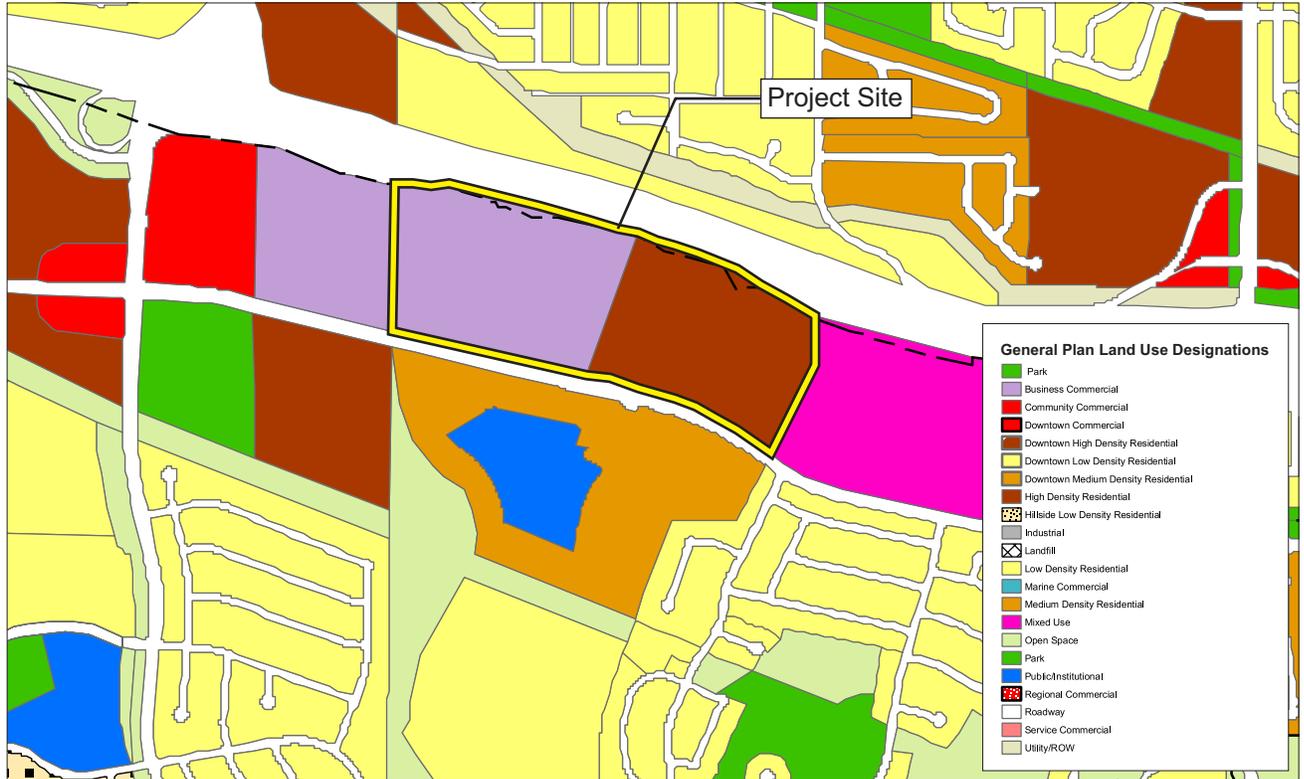
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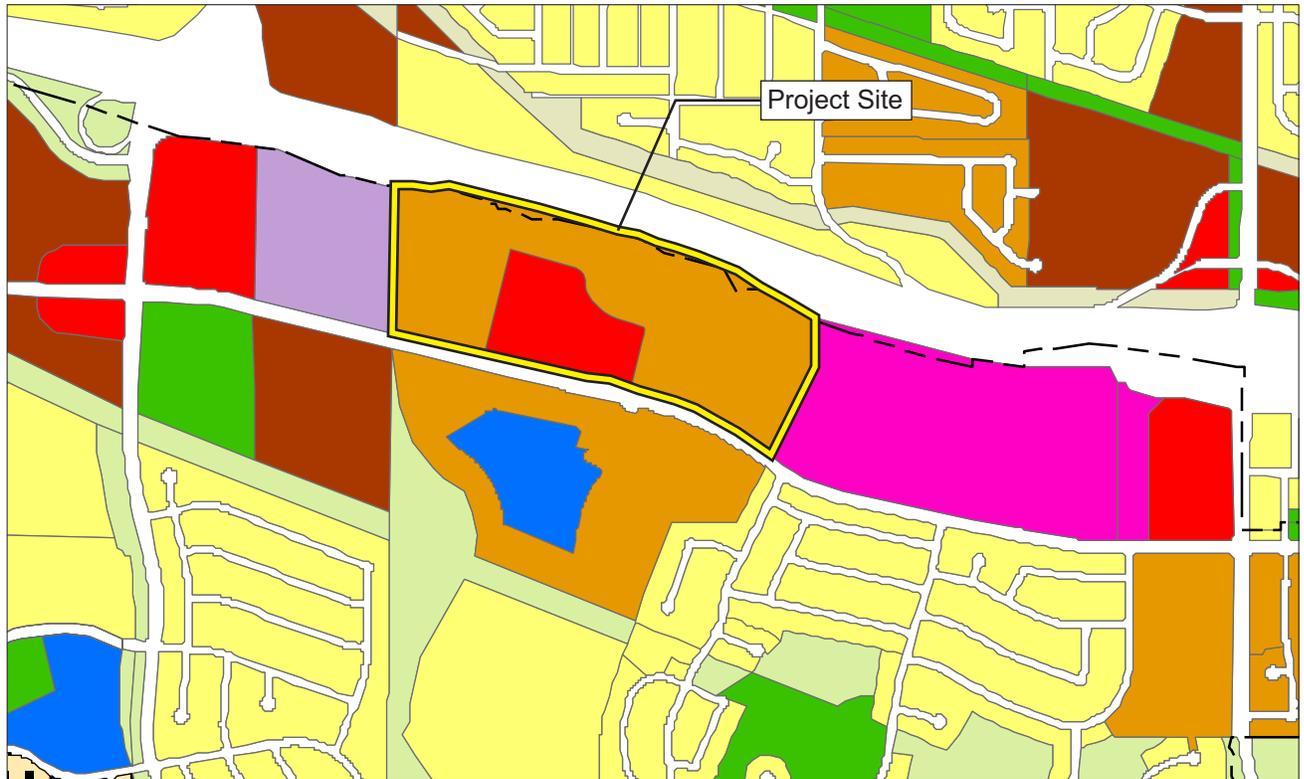
Source: VanderToolen Associates, June 15, 2018.

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Existing General Plan Land Use



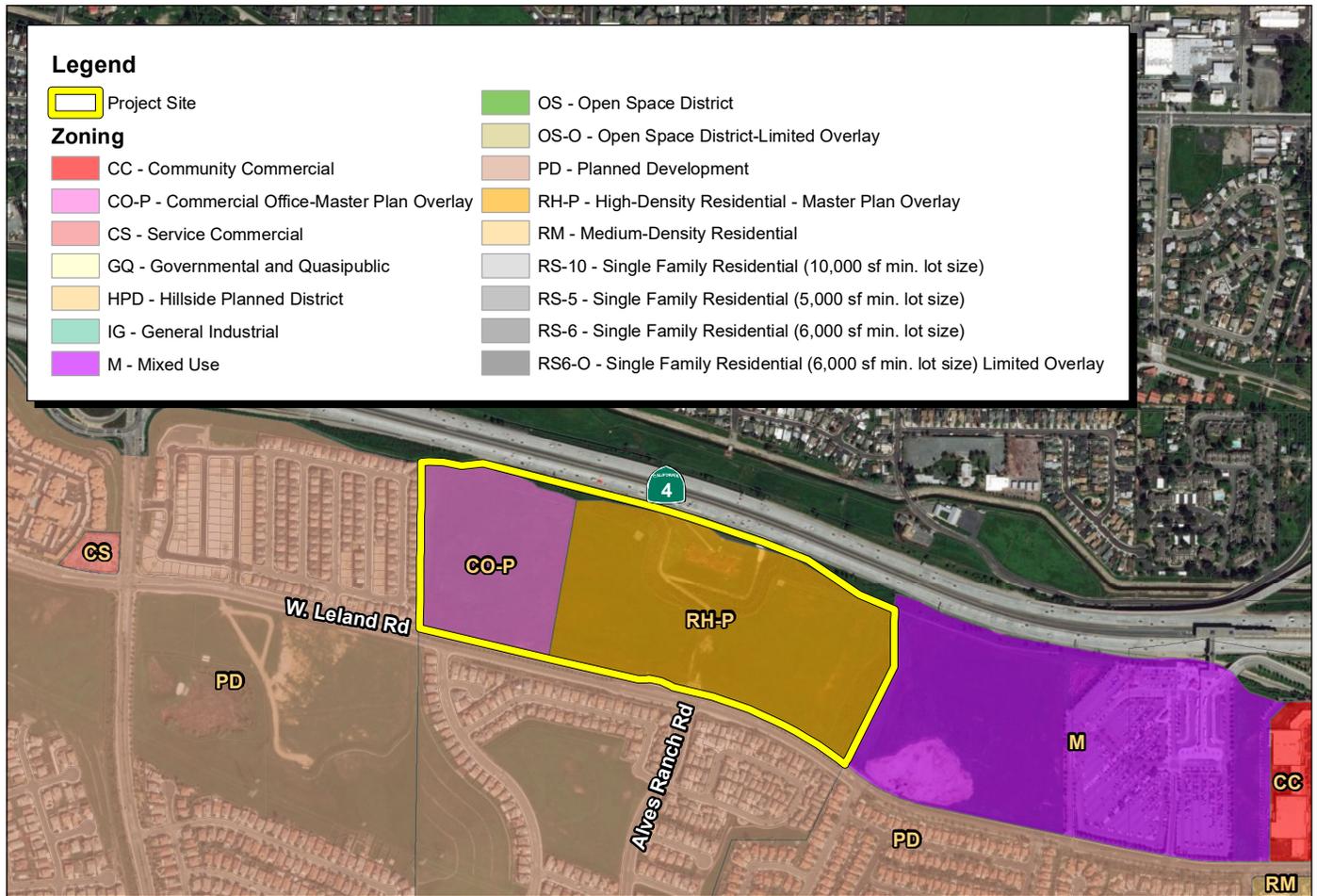
Proposed General Plan Land Use



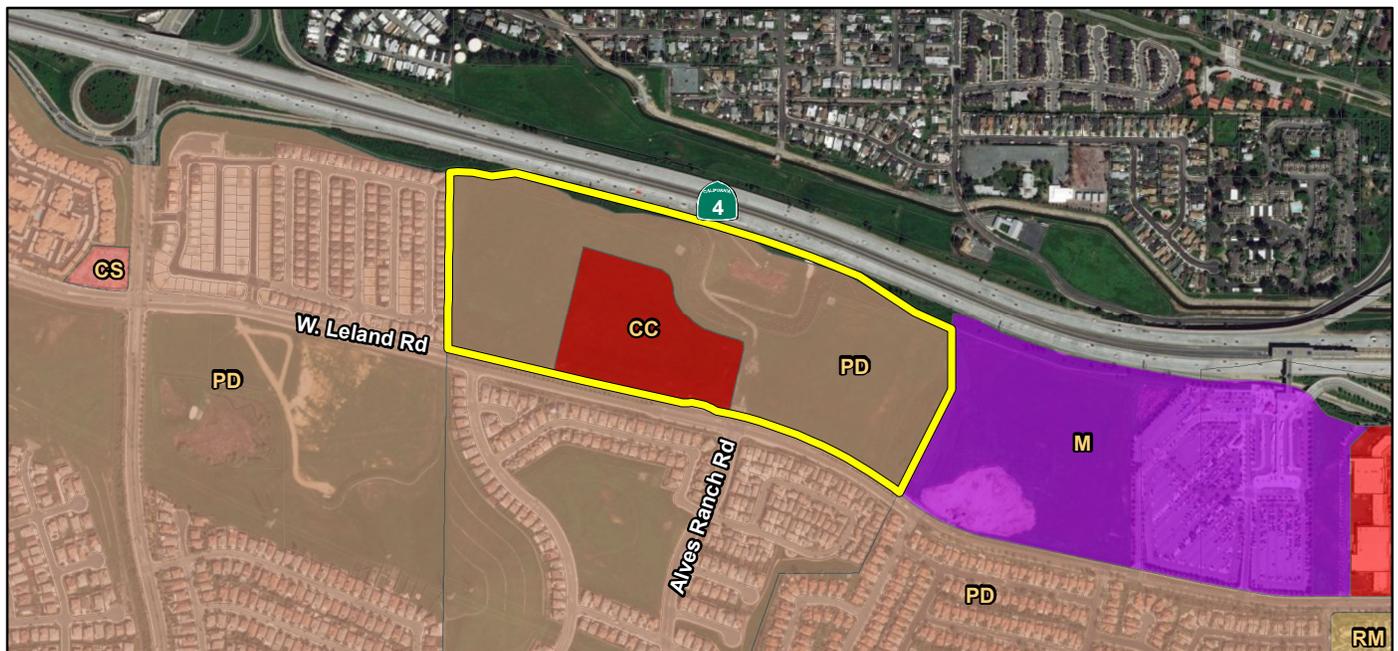
Source: City of Pittsburg General Plan Land Use Map.

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Existing Zoning



Proposed Zoning



Source: ESRI Aerial Imagery. City of Pittsburg Zoning Data.



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Note: Artist's Conception; Colors, Materials And Application May Vary.

PLAN 2B
BUNGALOW

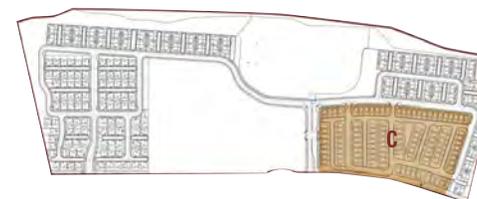
PLAN 1C
Cottage

PLAN 3A
TRADITIONAL

PLAN 2C
Cottage

PLAN 3B
BUNGALOW

PLAN 1A
TRADITIONAL



KEY MAP

Source: WHA Architects, Planners, Designers, July 10, 2018.

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Note: Artist's Conception; Colors, Materials And Application May Vary.

PLAN 2ZA
TRADITIONAL

PLAN 1CR
COTTAGE

PLAN 2B
BUNGALOW

PLAN 3AR
TRADITIONAL

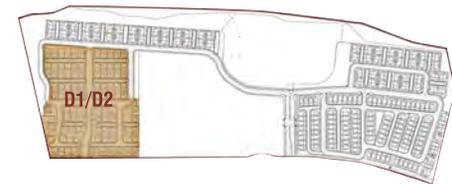
PLAN 2XC
COTTAGE



PLAN 2ZA
TRADITIONAL
CORNER LOT CONDITION



PLAN 2XC
COTTAGE
CORNER LOT CONDITION



KEY MAP

Source: WHA Architects, Planners, Designers, July 10, 2018.

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Note: Artist's Conception; Colors, Materials And Application May Vary.

PLAN 2AR - LEFT

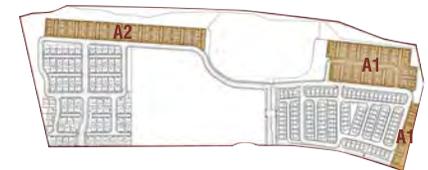
PLAN 2AR

PLAN 1AR

PLAN 1B

PLAN 2B

PLAN 2B - RIGHT



KEY MAP

Source: WHA Architects, Planners, Designers, July 10, 2018.

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Exhibit 2-8c
Typical Elevations

CITY OF PITTSBURG • ALVES RANCH PROJECT
ENVIRONMENTAL IMPACT REPORT

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Vehicular Circulation

Vehicular access to the residential portion would be taken from two points off West Leland Road, as shown in Exhibit 2-4. Alves Ranch Road would be extended north into the site between the commercial area and Neighborhood C in what is generally the center of the 2018 Project's frontage along West Leland Road, and would form the fourth leg of an existing signalized intersection. A full access unsignalized intersection is also proposed off West Leland Road, west of Alves Ranch Road adjacent to Neighborhood D. This unsignalized intersection would be off-set from Tomales Bay Drive, which would remain a right-in/right-out side-street stop-controlled intersection. A separate entrance to the commercial portion of the 2018 Project off West Leland Road would also be constructed later in connection with development of the proposed commercial uses. An additional emergency vehicle access location would be provided on the eastern portion of the site south of Neighborhood C, approximately 750 feet east of Alves Ranch Road.

2.4 - Project Objectives

The objectives of the 2018 Project are to:

1. Contribute to the local economy in an economically viable manner through new capital investment, expansion of the tax base, and creation of new jobs and housing opportunities.
2. Promote infill growth within the existing City limits that is consistent with the City of Pittsburg General Plan and related prior planning and entitlement actions for the project site and adjacent areas.
3. Develop new housing, and provide potential employment and shopping opportunities within walking distance of the Pittsburg/Bay Point BART station.
4. Add more inventory to the local and regional housing supply.
5. Provide flexibility with the 12 acres reserved for future commercial use in order to be responsive to market conditions.
6. Provide new recreational opportunities including trails and active recreation areas.
7. Complete the buildout of project site consistent with the overall planning vision set forth in the Southwest Hills General Plan Amendment and the related Vista Del Mar Project.
8. Improve utilization of an existing storm drainage basin by increasing the outfall height as opposed to constructing a new basin or expanding an existing basin.
9. Close a gap in the pedestrian/bicycle network by constructing a 12-foot-wide multi-use path along the project frontage with West Leland Road.

2.5 - Intended Uses of This Draft SEIR

This Draft SEIR is being prepared by the City of Pittsburg to assess the potential environmental impacts that may arise in connection with actions related to implementation of the 2018 Project.

Pursuant to CEQA Guidelines Section 15367, the City of Pittsburg is the lead agency for the 2018 Project and has discretionary authority over the 2018 Project and Project approvals. The Draft SEIR is intended to address all public infrastructure improvements and all phases of development (both residential and commercial) that are within the parameters of the 2018 Project as described in this Section 2, Project Description.

2.5.1 - Discretionary and Ministerial Actions

Discretionary approvals and permits are required by the City of Pittsburg for implementation of the 2018 Project. The project application would require the following discretionary approvals and actions from the City, including:

- Certification of the Supplemental Environmental Impact Report.
- Adoption of an Amendment to the existing Development Agreement, to specify the Developer's commitment to include a minimum of 10 affordable housing units and to modify the number of affordable housing units to be constructed, as well as to provide further specificity of the units' sizes and amenities.
- Adoption of General Plan Amendment.
- Approval of a Zoning Map Amendment.
- Approval of a Vesting Tentative Subdivision Map.
- Design Review Approval of Architecture and Landscape Plans.

Further discretionary approvals would be required for development of the commercially-zoned parcel, which could include design review approval of architecture and landscaping plans. Ministerial actions by the City would also be required for the implementation of the 2018 Project, such as issuance of grading and building permits subsequent to the discretionary approvals noted above.

2.5.2 - Responsible and Trustee Agencies

A number of other agencies in addition to the City of Pittsburg will serve as Responsible and Trustee Agencies, pursuant to CEQA Guidelines Section 15381 and Section 15386, respectively. This Draft SEIR will provide environmental information to these agencies and other public agencies, which may be required to grant approvals or coordinate with other agencies, as part of project implementation. These agencies may include, but are not limited to, the following:

- United States Army Corps of Engineers
- United States Fish and Wildlife Service
- California Department of Fish and Wildlife
- California Department of Transportation
- San Francisco Bay Regional Water Quality Control Board
- Bay Area Air Quality Management District
- Contra Costa Water District
- Delta Diablo Sanitation District

Actions that are necessary to implement the 2018 Project that must be taken by other agencies include:

- Obtain coverage under the General Permit (RWQCB).
- Issuance of Encroachment Permits (Caltrans)

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SECTION 3: ENVIRONMENTAL IMPACT ANALYSIS

Organization of Issue Areas

This Draft Supplemental Environmental Impact Report (Draft SEIR) provides analysis of impacts for those environmental topics where it was determined by the City, based on substantial evidence in the record including, among others, as documented in the Notice of Preparation (NOP) (and as further explained in the Initial Study attached to the NOP), and/or through subsequent analysis that the proposed 2018 Alves Ranch Project (2018 Project) would result in “potentially significant impacts.” Sections 3.1 through 3.5 discuss the environmental impacts that may result with approval and implementation of the proposed 2018 Project based on an analysis conducted in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15163.

Issues Addressed in this Draft SEIR

The following environmental issues are addressed in Section 3:

- Air Quality
- Biological Resources
- Greenhouse Gas Emissions
- Noise
- Transportation

Level of Significance

Determining the severity of project impacts is fundamental to achieving the objectives of CEQA. CEQA Guidelines Section 15091 requires that decision makers mitigate, as completely as is feasible, the significant impacts identified in the Final EIR. If the EIR identifies any significant unmitigated impacts, CEQA Guidelines Section 15093 requires decision makers in approving a project to adopt a statement of overriding considerations that explains why the benefits of the project outweigh the adverse environmental consequences identified in the EIR.

The level of significance for each impact examined in this Draft SEIR was determined by considering the predicted magnitude of the impact against the applicable threshold. Thresholds were developed using criteria from the CEQA Guidelines and checklist; State, federal, and local regulatory schemes; local/regional plans and ordinances; accepted practice; consultation with recognized experts; and other professional opinions. In evaluating whether changes to the 2018 Project as currently proposed would result in new significant environmental impacts or an increase in severity of previously identified significant impacts, this Draft SEIR considers the incremental difference between the previously approved project and the proposed 2018 Project.

This Draft SEIR has been prepared in accordance with CEQA to evaluate the changes to the Alves Ranch Project originally analyzed in the 2004 Vista Del Mar EIR, State Clearinghouse No. 2004012097, certified on October 18, 2004. The original EIR consists of the following

documents: the Draft EIR; the Response to Comments/Final EIR; and Resolution 04-10168, which certified the original EIR, made the required findings, approved the original Mitigation Monitoring and Reporting Program and approved and authorized the original Alves Ranch Project as part of the larger Vista Del Mar development. This original EIR, consisting of the foregoing documents collectively, is referred to herein as the “2004 EIR.” This supplemental document has been prepared in conformance with CEQA (California Public Resources Code [PRC] § 21000, *et seq.*) and the CEQA Guidelines (California Code of Regulations [CCR] Title 14 § 15000, *et seq.*). This Draft SEIR is intended to serve as an informational document for the public agency decision makers and the public regarding the 2018 Alves Ranch Project (2018 Project).

This Draft SEIR provides a project-level analysis of the environmental effects of the 2018 Project. The environmental impacts of the 2018 Project are analyzed in the SEIR to the degree of specificity appropriate, in accordance with CEQA Guidelines Section 15146. In accordance with CEQA Guidelines Section 15163, this document addresses whether: (1) changes to the Alves Ranch Project; (2) a change in circumstances under which the original Alves Ranch Project was undertaken; or (3) new information of substantial importance exists, which would result in any new significant impacts or an increase in severity of previously identified significant impacts. It also identifies appropriate and feasible mitigation measures and a reasonable range of alternatives that, if adopted, could significantly reduce or avoid certain of these impacts.

Section 21166 of the Public Resources Code provides that “no subsequent or supplemental environmental impact report shall be required by the lead agency or any responsible agency” unless one of three circumstances apply:

- (1) Substantial changes to the approved project will require major revisions to the certified EIR;
- (2) substantial changes occur with respect to the circumstances under which the approved project is being undertaken will require major revisions to the certified EIR; or
- (3) new information, that was not known and could not have been known at the time the EIR for the approved project was certified becomes available.

The factors used to evaluate whether a subsequent or a supplemental EIR should be prepared are set forth in CEQA Guidelines Sections 15162 and 15163 and relate to whether “substantial changes” to the EIR are required. As identified in CEQA Guidelines Section 15162, substantial changes to the EIR are those that are required:

1. Due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
2. Where mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
3. Where mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on

the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Section 15163 of the CEQA Guidelines provides that the City may choose to prepare a supplement to an EIR rather than a subsequent EIR if any of the conditions described in Section 15162 would require the preparation of a subsequent EIR, but only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation. Section 15163 further explains that:

1. The supplement to the EIR need contain only the information necessary to make the previous EIR adequate for the project as revised.
2. A supplement to an EIR shall be given the same kind of notice and public review as is given to a draft EIR under Section 15087.
3. A supplement to an EIR may be circulated by itself without recirculating the previous draft or final EIR.
4. When the agency decides whether to approve the project, the decision-making body shall consider the previous EIR as revised by the supplemental EIR. A finding under Section 15091 shall be made for each significant effect shown in the previous EIR as revised.

Impact Analysis and Mitigation Measure Format

The format adopted in this Draft SEIR to present the evaluation of impacts is described and illustrated below.

Summary Heading of Impact

Impact AIR-1: An impact summary heading appears immediately preceding the impact description (Summary Heading of Impact in this example). The impact number identifies the section of the report (AIR for Air Quality in this example) and the sequential order of the impact (1 in this example) within that section. To the right of the impact number is the impact statement, which identifies the potential impact.

Impact Analysis

A narrative analysis follows the impact statement.

Level of Significance Before Mitigation

This section identifies the level of significance of the impact before any mitigation is proposed.

Mitigation Measures

In some cases, following the impact discussion, reference is made to State and federal laws, regulations and agency policies that would fully or partially mitigate the impact. In addition,

policies and programs from applicable local land use plans that partially or fully mitigate the impact may be cited.

Project-specific mitigation measures, beyond those contained in other documents, are set off with a summary heading and described using the format presented below:

MM AIR-1 Project-specific mitigation is identified that would reduce the impact to the lowest degree feasible. The mitigation number links the particular mitigation to the impact it is associated with (Mitigation Measure [MM] AIR-1 in this example); mitigation measures are numbered sequentially.

Level of Significance After Mitigation

This section identifies the resulting level of significance of the impact following mitigation.

Abbreviations used in the mitigation measure numbering are:

Code	Environmental Issue
AIR	Air Quality
BIO	Biological Resources
GHG	Greenhouse Gas Emissions
NOI	Noise
TRANS	Transportation

3.1 - Air Quality

3.1.1 - Introduction

This section describes existing air quality conditions regionally and locally as well as the relevant regulatory framework. This section also evaluates the potential new impacts related to air quality that could result from implementation of the 2018 Project, as compared to those impacts evaluated in the 2004 Environmental Impact Report (EIR), in order to determine whether additional analysis is necessary to ensure the 2004 Final EIR is adequate for purposes of evaluating the 2018 Project. Information included in this section is based, in part, on project-specific air quality modeling results utilizing California Emissions Estimator Model (CalEEMod) version 2016.3.2 and the American Meteorological Society/United States Environmental Protection Agency (EPA) AERMOD air dispersion model (Version 18081). Complete modeling output is provided in Appendix C.

As explained more fully in this air quality section, the 2004 Final EIR concluded that implementation of the original Alves Ranch project would result in a significant (but mitigatable) impact related to construction emissions, and a significant and unavoidable impact related to cumulative impacts on regional air emissions. The 2004 Final EIR included mitigation that required the implementation of best management practices for dust control during construction would reduce the identified construction-related impact to less than significant. The 2004 Final EIR required implementation of strategies to reduce operational emissions through incentives for alternative transportation for future residents and employees; however, the 2004 Final EIR concluded that this cumulative operation-related impact would remain significant and unavoidable because the strategies would not be able to reduce emissions sufficiently (i.e., by 33 percent).

This air quality section includes updated environmental setting information to characterize the existing environment in order to appropriately reflect any changed circumstances since the 2004 Final EIR was certified, and includes additional analysis and refinements to mitigation measures, where needed, to ensure that the analysis provided by the 2004 Final EIR, as revised herein, is adequate to evaluate the 2018 Project as currently proposed.

3.1.2 - Environmental Setting

Air Basin

The project site is located in the City of Pittsburg in Contra Costa County and is within the San Francisco Bay Area Air Basin (SFBAAB or Air Basin). The SFBAAB consists of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties; the western portion of Solano County; and the southern portion of Sonoma County. Regional and local air quality is impacted by dominant airflows, topography, atmospheric inversions, location, season, and time of day. These characteristics are discussed in relation to the SFBAAB.

Air Basin Local Climate

The San Francisco Bay Area has a Mediterranean climate characterized by mild, dry summers and mild, moderately wet winters, as well as moderate daytime onshore breezes, and moderate humidity.

A semi-permanent, high-pressure area centered over the northeastern Pacific Ocean dominates the summer climate of the West Coast. Because this high-pressure cell is quite persistent, storms rarely affect the California coast during the summer. Thus, the conditions that persist along the coast of California during summer are a northwest airflow and negligible precipitation. A thermal low-pressure area from the Sonoran-Mojave Desert also causes air to flow onshore over the San Francisco Bay Area much of the summer.

The steady northwesterly flow around the eastern edge of the Pacific High (a high-pressure cell) exerts stress on the ocean surface along the west coast. This induces upwelling of cold water from below. Upwelling produces a band of cold water off San Francisco that is approximately 80 miles wide. During July, the surface waters off San Francisco are 3 degrees Fahrenheit (°F) cooler than those off Vancouver, British Columbia, more than 900 miles to the north. Air approaching the California coast, already cool and moisture-laden from its long trajectory over the Pacific, is further cooled as it flows across this cold bank of water near the coast, thus accentuating the temperature contrast across the coastline. This cooling is often sufficient to produce condensation—a high incidence of fog and stratus clouds along the Northern California coast in summer.

In summer, the northwest winds to the west of the Pacific coastline are drawn into the interior through the gap in the western Coast Ranges, known as the Golden Gate, and over the lower portions of the San Francisco Peninsula. Immediately to the south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more nearly from the west as they stream through the Golden Gate. This channeling of the flow through the Golden Gate¹ produces a jet that sweeps eastward but widens downstream, producing southwest winds at Berkeley and northwest winds at San José; a branch curves eastward through the Carquinez Straits and into the Central Valley. Wind speeds may be locally strong in regions where air is channeled through a narrow opening such as the Golden Gate, the Carquinez Strait, or San Bruno Gap. For example, the average wind speed at San Francisco International Airport from 3:00 a.m. to 4:00 p.m. in July is about 20 miles per hour (mph), compared with only about 8 mph at San José and less than 7 mph at the Farallon Islands.

The sea breeze between the coast and the Central Valley² commences near the surface along the coast in late morning or early afternoon; it may first be observed only through the Golden Gate. Later in the day, the layer deepens and intensifies while spreading inland. As the breeze intensifies and deepens, it flows over the lower hills farther south along the peninsula. This process frequently can be observed as a bank of stratus clouds “rolling over” the coastal hills on the west side of the bay. The depth of the sea breeze depends in large part upon the height and strength of the inversion. The generally low elevation of this stable layer of air prevents marine air from flowing over the coastal hills. It is unusual for the summer sea breeze to flow over terrain exceeding 2,000 feet in elevation.

In winter, the SFBAAB experiences periods of storminess, moderate-to-strong winds, and periods of stagnation with very light winds. Winter stagnation episodes are characterized by outflow from the

¹ A strait on the west coast of North America that connects the San Francisco Bay to the Pacific Ocean.

² A flat valley that dominates the geographical center of California stretching 450 miles from north-northwest to south-southeast, inland from and parallel to the Pacific Ocean coast. It is bounded by the Sierra Nevada to the east and the Coast Ranges to the west.

Central Valley, nighttime drainage flows in coastal valleys, weak onshore flows in the afternoon, and otherwise light and variable winds.

A primary factor in air quality is the mixing depth (the vertical air column available for dilution of contaminant sources). Generally, the temperature of air decreases with height, creating a gradient from warmer air near the ground to cooler air at elevation. This is caused by most of the sun’s energy being converted to sensible heat at the ground, which in turn warms the air at the surface. The warm air rises in the atmosphere, where it expands and cools. Sometimes, however, the temperature of air actually increases with height. This condition is known as temperature inversion, because the temperature profile of the atmosphere is “inverted” from its usual state. Over the SFBAAB, the frequent occurrence of temperature inversions limits mixing depth and, consequently, limits the availability of air for dilution.

Air Pollutant Types, Sources, and Effects

Criteria Air Pollutants

Air pollutants are termed criteria air pollutants if they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. Table 3.1-1 provides a summary of the types, sources, and effects of criteria air pollutants.

Table 3.1-1: Description of Criteria Pollutants of National and California Concern

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Ozone	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between volatile organic compounds (VOC), nitrous oxides (NO _x), and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO _x) are mobile sources (on-road and off-road vehicle exhaust).	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.
Particulate matter (PM ₁₀) Particulate matter (PM _{2.5})	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM ₁₀ refers to particulate matter that is between 2.5 and 10 microns in diameter, (one micron is one-millionth of a meter). PM _{2.5} refers to	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal, and recycling. Mobile or transportation related	<ul style="list-style-type: none"> • Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function;

Table 3.1-1 (cont.): Description of Criteria Pollutants of National and California Concern

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
	particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.	chronic bronchitis; changes in lung morphology; death.
Nitrogen dioxide (NO ₂)	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO _x (NO, NO ₂ , NO ₃ , N ₂ O, N ₂ O ₃ , N ₂ O ₄ , and N ₂ O ₅). NO _x is a precursor to ozone, PM ₁₀ , and PM _{2.5} formation. NO _x can react with compounds to form nitric acid and related small particles and result in PM related health effects.	NO _x is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide forms quickly from NO _x emissions. NO ₂ concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contributions to atmospheric discoloration; increased visits to hospital for respiratory illnesses.
Carbon monoxide (CO)	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.
Sulfur dioxide (SO ₂)	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 parts per million (ppm), the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO _x) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM ₁₀ .	Human caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethyl sulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Table 3.1-1 (cont.): Description of Criteria Pollutants of National and California Concern

Criteria Pollutant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Lead (Pb)	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.
Source: South Coast Air Quality Management District (SCAQMD) 2007a; California Environmental Protection Agency (Cal/EPA) 2002; California Air Resources Board (ARB) 2009; United States Environmental Protection Agency (EPA) 2003, 2009a, 2009b, 2010, 2011a, and 2012; National Toxicology Program 2011a and 2011b			

Toxic Air Contaminants

Concentrations of toxic air contaminants (TACs) are also used as indicators of air quality conditions. Air pollutant human exposure standards are identified for many TACs, including the following common TACs relevant to development projects: particulate matter, fugitive dust, lead, and asbestos. These air pollutants are called TACs because they are air pollutants that may cause or contribute to an increase in mortality or serious illness, or may otherwise pose a hazard to human health. TACs can cause long-term health effects (such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage) or short-term acute effects (such as eye watering, respiratory irritation, runny nose, throat pain, or headaches). TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health impacts may pose a threat to public health even at low concentrations.

TACs are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to a particular TAC. Carcinogens are assumed to have no safe threshold, below which health impacts would not occur. For noncarcinogenic substances, there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels may vary depending on the specific pollutant. Acute and chronic exposure to noncarcinogens is expressed as a hazard index (HI), which is the ratio of expected exposure levels to an acceptable reference exposure levels (RELs). Cancer risk is typically expressed as excess cancer cases per million exposed individuals, typically over a lifetime exposure or other prolonged duration. Table 3.1-2 provides a summary of the types, sources, and effects of TACs.

Table 3.1-2: Description of Toxic Air Contaminants of National and California Concern

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
Diesel Particulate Matter (DPM)	DPM is a source of PM _{2.5} —diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.	Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.
VOCs	Reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM ₁₀ and lower visibility.	Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.
Benzene	Benzene is a VOC. It is a clear or colorless light-yellow, volatile, highly flammable liquid with a gasoline-like odor. The EPA has classified benzene as a “Group A” carcinogen.	Benzene is emitted into the air from fuel evaporation, motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is used as a solvent for paints, inks, oils, waxes, plastic, and rubber. Benzene occurs	Short-term (acute) exposure of high doses from inhalation of benzene may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation, and at higher levels, loss of consciousness

Table 3.1-2 (cont.): Description of Toxic Air Contaminants of National and California Concern

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
		naturally in gasoline at one to two percent by volume. The primary route of human exposure is through inhalation.	can occur. Long-term (chronic) occupational exposure of high doses has caused blood disorders, leukemia, and lymphatic cancer.
Asbestos	Asbestos is the name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The three most common types of asbestos are chrysotile, amosite, and crocidolite.	Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States.	Exposure to asbestos is a health threat; exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest, and abdominal cavity), and asbestosis (a non-cancerous lung disease that causes scarring of the lungs). Exposure to asbestos can occur during demolition or remodeling of buildings that were constructed prior to the 1977 ban on asbestos for use in buildings. Exposure to naturally occurring asbestos can occur during soil-disturbing activities in areas with deposits present.
Hydrogen Sulfide	Hydrogen sulfide (H ₂ S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.
Sulfates	Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.

Table 3.1-2 (cont.): Description of Toxic Air Contaminants of National and California Concern

Toxic Air Contaminant	Physical Description and Properties	Sources	Most Relevant Effects from Pollutant Exposure
<p>Visibility Reducing Particles</p>	<p>Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM₁₀ refers to particulate matter that is between 2.5 and 10 microns in diameter (1 micron is one-millionth of a meter). PM_{2.5} refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.</p>	<p>Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal; and recycling. Mobile or transportation-related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.</p>	<ul style="list-style-type: none"> • Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravates existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.
<p>Vinyl Chloride</p>	<p>Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, the California Air Resources Board (ARB) identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.</p>	<p>Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.</p>	<p>Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.</p>
<p>Lead (Pb)</p>	<p>Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.</p>	<p>Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.</p>	<p>Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.</p>

Source: South Coast Air Quality Management District (SCAQMD) 2007a; California Environmental Protection Agency (Cal/EPA) 2002; California Air Resources Board (ARB) 2009; United States Environmental Protection Agency (EPA) 2003, 2009a, 2009b, 2010, 2011a, and 2012; National Toxicology Program 2011a and 2011b

Air Quality

Regional

Air quality is a function of both the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features. Atmospheric conditions such as wind speed, wind direction, and air temperature inversions interact with the physical features of the landscape to determine the movement and dispersal of air pollutant emissions and, consequently, their effect on air quality.

The project site is within the jurisdiction of Bay Area Air Quality Management District (BAAQMD). BAAQMD is the regional agency with jurisdiction for regulating air quality within the nine-county SFBAAB.

Air Pollutant Standards and Attainment Designations

Air pollutant standards have been identified by the EPA and the California Air Resources Board (ARB) for the following six criteria air pollutants that affect ambient air quality: ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), lead, and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 microns in diameter (PM₁₀), and PM equal to or less than 2.5 microns in diameter (PM_{2.5}). These air pollutants are called “criteria air pollutants” because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. California has also established standards for sulfates, visibility-reducing particles, hydrogen sulfide, and vinyl chloride. Table 3.1-3 presents the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS).

Table 3.1-3: Federal and State Air Quality Standards

Air Pollutant	Averaging Time	California Standard (CAAQS)	Federal Standard ^a (NAAQS)
Ozone	1 Hour	0.09 ppm	—
	8 Hour	0.070 ppm	0.070 ppm ^f
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm
	8 Hour	9.0 ppm	9 ppm
Nitrogen dioxide ^b (NO ₂)	1 Hour	0.18 ppm	0.100 ppm
	Annual	0.030 ppm	0.053 ppm
Sulfur dioxide ^c (SO ₂)	1 Hour	0.25 ppm	0.075 ppm
	3 Hour	—	0.5 ppm
	24 Hour	0.04 ppm	0.14 (for certain areas)
	Annual	—	0.030 ppm (for certain areas)
Particulate matter (PM ₁₀)	24 hour	50 µg/m ³	150 µg/m ³
	Mean	20 µg/m ³	—

Table 3.1-3 (cont.): Federal and State Air Quality Standards

Air Pollutant	Averaging Time	California Standard (CAAQS)	Federal Standard ^a (NAAQS)
Particulate matter (PM _{2.5})	24 Hour	—	35 µg/m ³
	Annual	12 µg/m ³	12.0 µg/m ³
Visibility reducing particles	8 Hour	See note below ^d	
Sulfates	24 Hour	25 µg/m ³	—
Lead ^e	30-day	1.5 µg/m ³	—
	Quarter	—	1.5 µg/m ³
	Rolling 3-month average	—	0.15 µg/m ³
Vinyl chloride ^e	24 Hour	0.01 ppm	—
Hydrogen sulfide	1 Hour	0.03 ppm	—

Notes:

ppm = parts per million (concentration) µg/m³ = micrograms per cubic meter Annual = Annual Arithmetic Mean
30-day = 30-day average Quarter = Calendar quarter

^a Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3-hour SO₂, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

^b To attain the 1-hour nitrogen dioxide national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (0.100 ppm).

^c On June 2, 2010, a new 1-hour SO₂ standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 parts per billion (ppb). The 1971 SO₂ national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

^d Visibility reducing particles: In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the Statewide and Lake Tahoe Air Basin standards, respectively.

^e ARB has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

^f The EPA Administrator approved a revised 8-hour ozone standard of 0.07 ppb on October 1, 2015. The new standard went into effect 60 days after publication of the Final Rule in the Federal Register. The Final Rule was published in the Federal Register on October 26, 2015 and became effective on December 28, 2015.

Source of effects, properties, and sources: South Coast Air Quality Management District (SCAQMD) 2007a; California Environmental Protection Agency (EPA) 2002; California Air Resources Board (ARB) 2009; United States Environmental Protection Agency (EPA) 2003, 2009a, 2009b, 2010, 2011a, and 2012; National Toxicology Program 2011a and 2011b.

Source of standards: California Air Resources Board (ARB) 2013c.

Ambient air pollutant concentrations in the SFBAAB are measured at air quality monitoring stations operated by the ARB and BAAQMD. In general, the SFBAAB experiences low concentrations of most pollutants compared to federal or State standards.

Both the EPA and ARB use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the

areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are: attainment, nonattainment, and unclassified. “Attainment” status refers to those regions that are meeting federal and/or State standards for a specified criteria pollutant. “Nonattainment” refers to regions that do not meet federal and/or State standards for a specified criteria pollutant. “Unclassified” refers to regions where there is not enough data to determine the region’s attainment status for a specified criteria air pollutant. Each standard has a different definition, or “form” of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual PM_{2.5} standard is met if the three-year average of the annual average PM_{2.5} concentration is less than or equal to the standard.

The current attainment designations for SFBAAB are shown in Table 3.1-4. The SFBAAB is designated as nonattainment for the State ozone, PM₁₀, and PM_{2.5}, standards and nonattainment for the national ozone and PM_{2.5} standard.

Table 3.1-4: San Francisco Bay Area Air Basin Attainment Status

Pollutant	State Status	National Status
Ozone	Nonattainment	Nonattainment
Carbon monoxide	Attainment	Attainment
Nitrogen dioxide	Attainment	Attainment
Sulfur dioxide	Attainment	Attainment
PM ₁₀	Nonattainment	Unclassified
PM _{2.5}	Nonattainment	Nonattainment
Sulfates	Attainment	N/A
Hydrogen Sulfates	Unclassified	N/A
Visibility-reducing Particles	Unclassified	N/A
Lead	N/A	Attainment

Source: Bay Area Air Quality Management District (BAAQMD), 2017. Air Quality Standards and Attainment Status. January. Website: <http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status>. Accessed February 8, 2019.

Air Quality Index

The health impacts of the various air pollutants of concern can be presented in a number of ways. The clearest comparison is to the State and federal ozone standards. If concentrations are below the standard, it is safe to say that no health impact would occur to anyone. When concentrations exceed the standard, impacts will vary based on the amount by which the standard is exceeded. The EPA developed the Air Quality Index (AQI) as an easy-to-understand measure of health impacts compared with concentrations in the air. Table 3.1-5 provides a general description of the health impacts of ozone at different concentrations.

Table 3.1-5: Air Quality Index and Health Effects from Ozone

Air Quality Index/ 8-hour Ozone Concentration	Health Effects Description
<p>AQI—51—100—Moderate</p> <p>Concentration 55–70 ppb</p>	<p>Sensitive Groups: Children and people with asthma are the groups most at risk.</p> <p>Health Effects Statements: Unusually sensitive individuals may experience respiratory symptoms.</p> <p>Cautionary Statements: Unusually sensitive people should consider limiting prolonged outdoor exertion.</p>
<p>AQI—101—150—Unhealthy for Sensitive Groups</p> <p>Concentration 71–85 ppb</p>	<p>Sensitive Groups: Children and people with asthma are the groups most at risk.</p> <p>Health Effects Statements: Increasing likelihood of respiratory symptoms and breathing discomfort in active children and adults and people with respiratory disease, such as asthma.</p> <p>Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.</p>
<p>AQI—151—200—Unhealthy</p> <p>Concentration 86–105 ppb</p>	<p>Sensitive Groups: Children and people with asthma are the groups most at risk.</p> <p>Health Effects Statements: Greater likelihood of respiratory symptoms and breathing difficulty in active children and adults and people with respiratory disease, such as asthma; possible respiratory effects in general population.</p> <p>Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.</p>
<p>AQI—201—300—Very Unhealthy</p> <p>Concentration 106–200 ppb</p>	<p>Sensitive Groups: Children and people with asthma are the groups most at risk.</p> <p>Health Effects Statements: Increasingly severe symptoms and impaired breathing likely in active children and adults and people with respiratory disease, such as asthma; increasing likelihood of respiratory effects in general population.</p> <p>Cautionary Statements: Active children and adults, and people with respiratory disease, such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.</p>
<p>Source: Air Now. 2015. AQI Calculator: AQI to Concentration. Website: http://www.airnow.gov/index.cfm?action=re-sources.aqi_conc_calc. Accessed September 2, 2017.</p>	

Local Air Quality

The local air quality can be evaluated by reviewing relevant air pollution concentrations near the project area. Table 3.1-6 presents a summary of the highest annual concentrations of criteria air pollutants collected at the nearest air quality monitoring stations with available information for the most recent three-year period available. The table displays data from the Concord Monitoring Station, which is located approximately 7 miles southwest of the Project site at 2956-A Treat

Boulevard, Concord. The recorded data show an exceedance of the federal standards for PM_{2.5} (24-hour) on at least one occasion from 2015 through 2017. The data in the table reflect the concentration of the pollutants in the air, measured using air monitoring equipment. This differs from emissions, which are calculations of a pollutant being emitted over a certain period from an emission source. No exceedances of either the state or national standards were recorded for nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), and PM₁₀. No recent monitoring data for Contra Costa County, or the SFBAAB was available for CO or SO₂. Generally, monitoring is not conducted for pollutants that are no longer likely to exceed ambient air quality standards.

Table 3.1-6: Summary of Concord Station Criteria Pollutants Monitoring Data (2015–2017)

Air Pollutant	Averaging Time	Item	2015	2016	2017
Ozone	1 Hour	Max 1 Hour (ppm)	0.088	0.095	0.082
		Days > State Standard (0.09 ppm)	0	1	0
	8 Hour	Max 8 Hour (ppm)	0.074	0.075	0.070
		Days > State Standard (0.070 ppm)	4	2	0
		Days > National Standard (0.070 ppm)	2	2	0
Carbon monoxide	8 Hour	Max 8 Hour (ppm)	ND	ND	ND
		Days > State Standard (9.0 ppm)	ND	ND	ND
		Days > National Standard (9 ppm)	ND	ND	ND
Nitrogen dioxide	Annual	Annual Average (ppm)	0.007	0.006	0.006
	1 Hour	Max 1 Hour (ppm)	0.033	0.034	0.041
		Days > State Standard (0.18 ppm)	0	0	0
Sulfur dioxide	Annual	Annual Average (ppm)	ND	ND	ND
	24 Hour	Max 24 Hour (ppm)	ND	ND	ND
		Days > State Standard (0.04 ppm)	ND	ND	ND
Inhalable coarse particles (PM ₁₀)	Annual	Annual Average (µg/m ³)	13.1	11.5	ID
	24 hour	24 Hour (µg/m ³)	22.5	18.7	41.2
		Days > State Standard (50 µg/m ³)	0	0	ID
		Days > National Standard (150 µg/m ³)	0	0	ID
Fine particulate matter (PM _{2.5})	Annual	Annual Average (µg/m ³)	8.8	5.9	12.0
	24 Hour	24 Hour (µg/m ³)	31.0	20.7	89.4
		Days > National Standard (35 µg/m ³)	0	0	6
<p>Notes: > = exceed ppm = parts per million µg/m³ = micrograms per cubic meter ID = insufficient data ND = no data max = maximum Bold = exceedance State Standard = California Ambient Air Quality Standard National Standard = National Ambient Air Quality Standard Source: California Air Resources Board (ARB) 2017. iADAM: Air Quality Data Statistics for Concord-2956-A Treat Boulevard Air Monitoring Station. Website: https://www.arb.ca.gov/adam/. Accessed November 21, 2018.</p>					

Based on the AQI scale for the 8-hour ozone standard (Table 3.1-5), the project area experienced no days in the most recent three-year reporting period that would be categorized as very unhealthy (AQI 201-250). The highest reading was 95 parts per billion (ppb) in 2015, which would fall in the range for unhealthy (AQI 151-200).

Sensitive Receptors

Air pollution does not affect every individual in the population in the same way; some groups are more sensitive to adverse health effects than others. Land uses such as residences, schools, day care centers, hospitals, and nursing and convalescent homes are considered to be the most sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress or, as in the case of residential receptors, their exposure time to air pollutants is greater than that for other land uses. Therefore, these groups are referred to as sensitive receptors. Exposure assessment guidance typically assumes that residences would be exposed to air pollution 24 hours per day, 350 days per year, for 70 years. The BAAQMD defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, day care centers, hospitals, and senior-care facilities.

Project Vicinity

Adjacent neighborhoods to the west and south contain a mix of low- and medium-density residential land uses. State Route 4 (SR-4) is located just to the north of the project site. Existing residential uses are air-quality-sensitive receptors. The closest existing off-site sensitive receptors are the existing residential communities located adjacent to the west of the project site and to the south across West Leland Road, with the closest being located less than 15 feet from the boundary of the project site.

Project Site

The project site is currently vacant. As such, there are no sensitive receptors or emission sources on-site.

Existing Emission Sources

The primary sources of air pollutants in the project vicinity are the motor-related vehicle trips from the local residential communities and from SR-4. Other sources of emissions include space and water heating, landscape maintenance, and consumer products from nearby residential uses.

3.1.3 - Regulatory Framework

Federal

Clean Air Act

Congress established much of the basic structure of the Clean Air Act (CAA) in 1970, and made major revisions in 1977 and 1990. Six common air pollutants (also known as criteria pollutants) are addressed in the CAA. These are: particulate matter; ground-level ozone; CO; sulfur oxides; nitrogen oxides; and lead. The EPA calls these pollutants criteria air pollutants because it regulates them by developing human health-based and/or environmentally based criteria (science-based guidelines) for setting permissible levels. The set of limits based on human health are called primary standards.

Another set of limits intended to prevent environmental and property damage are called secondary standards (EPA 2014)³. The federal standards are called NAAQS. The air quality standards provide benchmarks for determining whether air quality is healthy at specific locations and whether development activities will cause or contribute to a violation of the standards.

The federal standards were established to protect public health, including that of sensitive individuals; thus, the EPA is tasked with updating the standards as more medical research is available regarding the health effects of the criteria pollutants. Primary federal standards are the levels of air quality necessary, with an adequate margin of safety, to protect the public health.

The CAA also requires each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The federal CAA Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins, as reported by their jurisdictional agencies.

EPA Emission Standards for New Off-Road Equipment

Before 1994, there were no standards to limit the amount of emissions from off-road equipment. In 1994, the EPA established emission standards for hydrocarbons, NO_x, CO, and PM to regulate new pieces of off-road equipment. These emission standards came to be known as Tier 1. Since that time, increasingly more stringent Tier 2, Tier 3, and Tier 4 (interim and final) standards were adopted by the EPA, as well as by the ARB. Each adopted emission standard was phased in over time. New engines built in and after 2015 across all horsepower sizes must meet Tier 4 final emission standards.

State

California Air Quality Control Plan (State Implementation Plan)

An SIP is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain federal standards. The SIP for the State of California is administered by the ARB, which has overall responsibility for Statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for regional air districts—an air district prepares their federal attainment plan, which is sent to the ARB to be approved and incorporated into the California SIP. Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms for attaining and maintaining air quality standards.

Areas designated nonattainment must develop air quality plans and regulations to achieve standards by specified dates, depending on the severity of the exceedances. For much of the country, implementation of federal motor vehicle standards and compliance with federal permitting requirements for industrial sources are adequate to attain air quality standards on schedule. For many areas of California, however, additional State and local regulation is required to achieve the standards.

³ United States Environmental Protection Agency (EPA). 2014. Clean Air Act Requirements and History. Website: <https://www.epa.gov/clean-air-act-overview/clean-air-act-requirements-and-history>. Accessed April 25, 2016.

California Clean Air Act

The California Legislature enacted the California Clean Air Act (CCAA) in 1988 to address air quality issues of concern not adequately addressed by the federal CAA at the time. The ARB administers the CAAQS for the 10 air pollutants designated in the CCAA. The 10 State air pollutants include the six federal pollutants listed above, as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The EPA authorized California to adopt its own regulations for motor vehicles and other sources that are more stringent than similar federal regulations implementing the CAA. Generally, the planning requirements of the CCAA are more stringent than the federal CAA; therefore, consistency with the CCAA will also demonstrate consistency with the CAA.

Other ARB responsibilities include but are not limited to: overseeing local air district compliance with California and federal laws; approving local air quality plans; submitting SIPs to the EPA; monitoring air quality; determining and updating area designations and maps; conducting basic research aimed at providing a better understanding between emissions and public well-being; and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

California Health and Safety Code Section 39655 and California Code of Regulations Title 17 Section 93000 (Substances Identified as Toxic Air Contaminants)

The ARB identifies TACs as those defined in Health and Safety Code Section 39655, and listed in Title 17, Section 93000 of the California Code of Regulations, “Substances Identified As Toxic Air Contaminants.” A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. In general, for those TACs that may cause cancer, there are thresholds set by regulatory agencies below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards. According to the *California Almanac of Emissions and Air Quality*, the majority of the estimated health risk from TACs for the State of California can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM) from diesel-fueled engines.

California Low-Emission Vehicle Program

The ARB first adopted Low-Emission Vehicle (LEV) program standards in 1990. These initial LEV standards ran from 1994 through 2003. As the State’s passenger vehicle fleet continued to grow and more sport utility vehicles and pickup trucks began to be used as passenger cars rather than work vehicles, the more stringent LEV II standards were adopted to provide reductions necessary for California to meet federally mandated clean air goals outlined in the 1994 SIP. In 2012, the ARB adopted the LEV III amendments. These amendments, also known as the Advanced Clean Car Program include more stringent emission standards for model years 2017 through 2025 for both criteria pollutants and greenhouse gas (GHG) emissions for new passenger vehicles (ARB 2013).⁴

⁴ California Air Resources Board (ARB). 2013. Clean Car Standards—Pavley, Assembly Bill 1493. Website: <http://www.arb.ca.gov/cc/ccms/ccms.htm>. Accessed February 14, 2017.

California On-Road Heavy-Duty Vehicle Program

The ARB has adopted standards for emissions from various types of new on-road heavy-duty vehicles. California Code of Regulations Section 1956.8, Title 13, contains California's emission standards for on-road heavy-duty engines and vehicles, and test procedures. The ARB has also adopted programs to reduce emissions from in-use heavy-duty vehicles including the Heavy-Duty Diesel Vehicle Idling Reduction Program, the Heavy-Duty Diesel In-Use Compliance Program, the Public Bus Fleet Rule and Engine Standards, and the School Bus Program and others (ARB 2013b).⁵

California In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, the ARB adopted a regulation to reduce DPM and NO_x emissions from in-use (existing) off-road heavy-duty diesel vehicles in California. Such vehicles are used in construction, mining, and industrial operations. The regulation limits idling to no more than five consecutive minutes, requires reporting and labeling, and requires disclosure of the regulation upon vehicle sale. Performance requirements of the In-Use Off-Road Diesel Vehicle regulation are based on a fleet's average NO_x emissions, which can be met by replacing older vehicles with newer, cleaner vehicles or by applying exhaust retrofits. The regulation was amended in 2010 to delay the original timeline of the performance requirements, making the first compliance deadline January 1, 2014, for large fleets (over 5,000 horsepower), 2017 for medium fleets (2,501-5,000 horsepower), and 2019 for small fleets (2,500 horsepower or less).

The latest amendments to the Truck and Bus regulation became effective on December 31, 2014. The amended regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet PM filter requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel-fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. The regulation provides a variety of flexibility options tailored to fleets operating low use vehicles, fleets operating in selected vocations like agriculture and construction, and small fleets of three or fewer trucks (ARB 2015b).⁶

California Airborne Toxic Control Measures for Asbestos

The ARB has adopted Airborne Toxic Control Measures (ATCM) for sources that emit a particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate Best Available Control Technology to minimize emissions.

In July 2001, the ARB approved an ATCM for construction, grading, quarrying, and surface mining operations to minimize emissions of naturally occurring asbestos. The regulation requires

⁵ California Air Resources Board (ARB). 2013b. The California Almanac of Air Quality and Emissions—2013 Edition. Website: <http://www.arb.ca.gov/aqd/almanac/almanac13/almanac13.htm>. Accessed February 14, 2017.

⁶ California Air Resources Board (ARB). 2015b. On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation. Website: <http://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm>. Accessed September 22, 2017.

application of best management practices (BMPs) to control fugitive dust in areas known to have naturally occurring asbestos and requires notification to the local air district prior to commencement of ground-disturbing activities. The measure establishes specific testing, notification and engineering controls prior to grading, quarrying, or surface mining in construction zones where naturally occurring asbestos is located on projects of any size. There are additional notification and engineering controls at work sites larger than one acre in size. These projects require the submittal of a “Dust Mitigation Plan” and approval by the air district prior to the start of a project.

Construction sometimes requires the demolition of existing buildings where construction occurs. Asbestos is also found in a natural state, known as naturally occurring asbestos. Exposure and disturbance of rock and soil that naturally contain asbestos can result in the release of fibers into the air and consequent exposure to the public. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos. In addition, another form of asbestos, tremolite, can be found associated with ultramafic rock, particularly near faults. Sources of asbestos emissions include unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

The ARB has an ATCM for construction, grading, quarrying, and surface mining operations, requiring the implementation of mitigation measures to minimize emissions of asbestos-laden dust. The measure applies to road construction and maintenance, construction and grading operations, and quarries and surface mines when the activity occurs in an area where naturally occurring asbestos is likely to be found. Areas are subject to the regulation if they are identified on maps published by the Department of Conservation as ultramafic rock units or if the Air Pollution Control Officer or owner/operator has knowledge of the presence of ultramafic rock, serpentine, or naturally occurring asbestos on the site. The measure also applies if ultramafic rock, serpentine, or asbestos is discovered during any operation or activity. Review of the Department of Conservation maps indicates that no ultramafic rock has been found near or in the City of Pittsburg.

Verified Diesel Emission Control Strategies

The EPA and ARB tiered off-road emission standards only apply to new engines and off-road equipment can last several years. The ARB has developed Verified Diesel Emission Control Strategies (VDECS), which are devices, systems, or strategies used to achieve the highest level of pollution control from existing off-road vehicles, to help reduce emissions from existing engines. VDECS are designed primarily for the reduction of DPM emissions and have been verified by the ARB. There are three levels of VDECS, the most effective of which is the Level 3 VDECS. Tier 4 engines are not required to install VDECS because they already meet the emissions standards for lower tiered equipment with installed controls.

California Diesel Risk Reduction Plan

The ARB Diesel Risk Reduction Plan has led to the adoption of new state regulatory standards for all new on-road, off-road, and stationary diesel-fueled engines and vehicles to reduce DPM emissions in 2020 by about 90 percent overall from year 2000 levels. The projected emission benefits associated

with the full implementation of this plan, including federal measures, are reductions in DPM emissions and associated cancer risks of 75 percent by 2010, and 85 percent by 2020 (ARB 2000).⁷

Tanner Air Toxics Act and Air Toxics Hot Spots Information and Assessment Act

TACs in California are primarily regulated through the *Tanner Air Toxics Act* (Assembly Bill [AB] 1807) and the *Air Toxics Hot Spots Information and Assessment Act of 1987* (AB 2588), also known as the “Hot Spots Act.” To date, the ARB has identified more than 21 TACs, and has adopted the EPA list of Hazardous Air Pollutants (HAPs) as TACs.

Carl Moyer Memorial Air Quality Standards Attainment Program

The *Carl Moyer Memorial Air Quality Standards Attainment Program* (“Carl Moyer Program”), a partnership between the ARB and local air districts, issues grants to replace or retrofit older engines and equipment with engines and equipment that exceed current regulatory requirements to reduce air pollution. Money collected through the Carl Moyer Program complements California’s regulatory program by providing incentives to effect early or extra emission reductions, especially from emission sources in environmental justice communities and areas disproportionately affected by air pollution. The program has established guidelines and criteria for the funding of emissions reduction projects. Within the SFBAAB, the BAAQMD administers the Carl Moyer Program. The program establishes cost-effectiveness criteria for funding emission reductions projects, which under the final 2017 Carl Moyer Program Guidelines are \$30,000 per weighted ton of NO_x, ROG, and PM (ARB 2017).⁸

Regional

BAAQMD CEQA Air Quality Guidelines

The BAAQMD is the primary agency responsible for ensuring that air quality standards (NAAQS and CAAQS) are attained and maintained in the SFBAAB through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The BAAQMD prepares plans to attain ambient air quality standards in the SFBAAB. The BAAQMD prepares ozone attainment plans for the national ozone standard, Clean Air Plans for the California standard, and PM plans to fulfill federal air quality planning requirements. The BAAQMD also inspects stationary sources of air pollution; responds to citizen complaints; monitors ambient air quality and meteorological conditions; and implements programs and regulations required by the *Clean Air Act*, the *Clean Air Act Amendments of 1990*, and the *California Clean Air Act*.

BAAQMD developed quantitative thresholds of significance for its *California Environmental Quality Act (CEQA) Guidelines* in 2010, which were also included in its updated 2011 guidelines (BAAQMD, 2010, 2011). BAAQMD’s adoption of the 2010 thresholds of significance was later challenged in court. In an opinion issued on December 17, 2015, related to the *BAAQMD CEQA Guidelines*, the California Supreme Court held that CEQA does not generally require an analysis of the impacts of locating development in areas subject to environmental hazards unless the project would exacerbate

⁷ California Air Resources Board (ARB). 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles. Website: <http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf>. Accessed September 22, 2017.

⁸ California Air Resources Board (ARB). 2017. 2017 Carl Moyer Program Guidelines. Website: <https://www.arb.ca.gov/msprog/moyer/guidelines/current.htm>. Accessed June 2, 2018.

existing environmental hazards. The California Supreme Court also found that CEQA requires the analysis of exposing people to environmental hazards in limited specific circumstances, including the location of development near airports, schools near sources of toxic contamination, and certain exemptions for infill and workforce housing. The California Supreme Court also held that public agencies remain free to voluntarily conduct this analysis not required by CEQA for their own public projects (*CBIA v. BAAQMD* [2016] 2 Cal. App. 5th 1067, 1083).

In view of the California Supreme Court's opinion, BAAQMD published a new version of its CEQA guidelines in May 2017. BAAQMD's *2017 CEQA Guidelines* state that local agencies may rely on thresholds designed to reflect the impact of locating development near areas of toxic air contamination where such an analysis is required by CEQA or where the agency has determined that such an analysis would assist in making a decision about the project. However, the thresholds are not mandatory and agencies should apply them only after determining that they reflect an appropriate measure of a project's impacts. BAAQMD's guidelines for implementation of the thresholds are for informational purposes only, to assist local agencies.

BAAQMD Particulate Matter Plan

To fulfill federal air quality planning requirements, BAAQMD adopted a PM_{2.5} emissions inventory for year 2010 at a public hearing on November 7, 2012. *The Bay Area Clean Air Plan* also included several measures for reducing PM emissions from stationary sources and wood burning. On January 9, 2013, the EPA issued a final rule determining that the Bay Area has attained the 24-hour PM_{2.5} NAAQS, suspending federal SIP planning requirements for the SFBAAB (EPA 2013).⁹ Despite this EPA action, the SFBAAB will continue to be designated as nonattainment for the national 24-hour PM_{2.5} standard until BAAQMD submits a redesignation request and a maintenance plan to the EPA, and the EPA approves the proposed redesignation.

On January 9, 2013, the EPA issued a final rule determining that the Bay Area is attaining the 2006 24-hour PM_{2.5} NAAQS, suspending key SIP requirements as long as monitoring data continues to show that the Bay Area attains the PM_{2.5} standard.¹⁰

BAAQMD 2017 Bay Area Clean Air Plan

BAAQMD adopted the *Bay Area Clean Air Plan: Spare the Air, Cool the Climate* ("Bay Area Clean Air Plan") on April 19, 2017, to provide a regional strategy to improve Bay Area air quality and meet public health goals (BAAQMD 2017d).¹¹ The control strategy described in the Bay Area Clean Air Plan includes a wide range of control measures designed to reduce emissions and lower ambient concentrations of harmful pollutants, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce GHG emissions to protect the climate.

⁹ United States Environmental Protection Agency (EPA). 2013. Federal Register. Determination of Attainment for the San Francisco Bay Area Nonattainment Area for the 2006 Fine Particle Standard; California; Determination Regarding Applicability of Clean Air Act Requirements. Website: <https://www.federalregister.gov/documents/2013/01/09/2013-00170/determination-of-attainment-for-the-san-francisco-bay-area-nonattainment-area-for-the-2006-fine>. Accessed June 5, 2018.

¹⁰ Bay Area Air Quality Management District (BAAQMD). 2017 Air Monitoring Network Plan. Website: http://www.baaqmd.gov/~media/files/technical-services/2017_network_plan_20180701-pdf.pdf. Accessed: December 20, 2018.

¹¹ Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. Website: 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 24, 2018.

The Bay Area Clean Air Plan addresses four categories of pollutants: ground-level ozone and its key precursors, ROG and NO_x; PM, primarily PM_{2.5}, and precursors to secondary PM_{2.5}; air toxics; and GHGs. The control measures are categorized based on the economic sector framework including stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, and water measures (BAAQMD 2017d).¹²

BAAQMD Regulation 2, Rule 5 (New Source Review Permitting)

BAAQMD regulates backup emergency generators, fire pumps, and other sources of TACs through its “New Source Review” (Regulation 2, Rule 5) permitting process (BAAQMD, 2016a). Although emergency generators are intended to be used only during periods of power outages, monthly testing of each generator is required; however, BAAQMD limits testing to no more than 50 hours per year. Each emergency generator installed is assumed to meet a minimum of Tier 2 emission standards (before control measures). As part of the permitting process, BAAQMD limits the excess cancer risk from any facility to no more than 10 per 1 million population for any permits that are applied for within a 2-year period and would require any source that would result in an excess cancer risk greater than 1 per 1 million to install Best Available Control Technology for Toxics.

BAAQMD Regulation 8, Rule 3 (Architectural Coatings)

This rule governs the VOC content in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the BAAQMD jurisdiction. The VOC content of paints, paint solvents and other coatings used during project construction and operation would be limited by this rule.

BAAQMD Regulation 8, Rule 15 (Emulsified and Liquid Asphalts)

The regulation limits the VOC content of asphalt available for sale and use in the region. Therefore, emulsified and liquid asphalts, if used during construction and operations, would comply with this rule.

BAAQMD Regulations Pertaining to Odorous Emissions

BAAQMD is responsible for investigating and controlling odor complaints within the District. The agency enforces odor control by helping the public to document a public nuisance; upon receipt of a complaint, BAAQMD sends an investigator to interview the complainant and to locate the odor source if possible. BAAQMD typically brings a public nuisance court action when there are a substantial number of confirmed odor events within a 24-hour period. An odor source with five or more confirmed complaints per year averaged over 3 years is considered to have a substantial effect on receptors.¹³

Several BAAQMD regulations and rules apply to odorous emissions. Regulation 1, Rule 301 is the nuisance provision that states that sources cannot emit air contaminants that cause nuisance to a

¹² Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. Website: 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 24, 2018.

¹³ Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed February 8, 2019.

considerable number of persons. Regulation 7 specifies limits for the discharge of odorous substances where BAAQMD receives complaints from 10 or more complainants within a 90-day period. Among other things, Regulation 7 precludes discharge of an odorous substance that causes the ambient air at or beyond the property line to be odorous after dilution with four parts of odor-free air, and specifies maximum limits on the emission of certain odorous compounds.

Association of Bay Area Governments and Metropolitan Transportation Commission “Plan Bay Area”

On July 18, 2013, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) approved *Plan Bay Area*, which includes integrated land use and transportation strategies for the region and was developed through OneBayArea, a joint initiative between ABAG, BAAQMD, MTC, and the San Francisco Bay Conservation and Development Commission (BCDC). The plan’s transportation policies focus on maintaining the extensive existing transportation network and utilizing these systems more efficiently to handle density in Bay Area transportation cores (ABAG and MTC 2013). Assumptions for land use development used are taken from local and regional planning documents. Emission forecasts in the previously discussed *Bay Area Clean Air Plan* rely on projections of vehicle miles traveled, population, employment, and land use projections made by local jurisdictions during development of Plan Bay Area.

Local

Pittsburg General Plan

The *City of Pittsburg General Plan* was adopted in November 2001. The *City of Pittsburg General Plan* establishes the following applicable objectives and policies that are relevant to air quality emissions:

Transportation Element

- **Policy 7-G-10:** Study the feasibility of a comprehensive network of on- and off-road bike routes to encourage the use of bikes for commute, recreational and other trips.
- **Policy 7-P-5:** Apply for federal Congestion Mitigation Air Quality grant funding designed to improve air quality through roadway improvement projects.
- **Policy 7-P-31:** Work with Tri-Delta and County Connection to schedule signal timing for arterials with heavy bus traffic, where air quality benefits can be demonstrated.

Resource Conservation Element

- **Policy 9-G-9:** Work toward improving air quality and meeting all Federal and State ambient air quality standards by reducing the generation of air pollutants from stationary and mobile sources.
- **Policy 9-G-10:** Reduce the potential for human discomfort or illness due to local concentrations of toxic contaminants, odors and dust.
- **Policy 9-G-11:** Reduce the number of motor vehicle trips and emissions accounted to Pittsburg residents and encourage land use and transportation strategies that promote use of alternatives to the automobile for transportation, including bicycling, bus transit, and carpooling.
- **Policy 9-P-29:** Cooperate with the Bay Area Air Quality Management District to achieve emissions reductions for ozone and its precursor, PM₁₀.

- **Policy 9-P-30:** Cooperate with Bay Area Air Quality Management District to ensure compliance with dust abatement measures during construction. These measures would reduce particulate emissions from construction and grading activities.
- **Policy 9-P-32:** Minimize emissions and air pollution from City operations by using alternative-fuel vehicles, as feasible.
- **Policy 9-P-33:** Encourage new residential development and remodeled existing homes to install clean-burning fireplaces and wood stoves.
- **Policy 9-P-43:** During redevelopment and rehabilitation of older residential units, ensure that the development process complies with the lead testing requirements established by Bay Area Air Quality Management District, Contra Costa County Environmental Health District, and Housing and Urban Development.

3.1.4 - Impacts and Mitigation Measures

Significance Criteria

The updated CEQA Guidelines were adopted on December 28, 2018. As further explained in Section 1 of this Draft Supplemental EIR, CEQA includes a presumption against requiring any further environmental review once an EIR has been prepared and certified for a project, and does not generally require an analysis of revisions made to laws or regulations after certification of the EIR. Furthermore, this Draft Supplemental EIR meets the content requirements for purposes of CEQA in effect when it was set out for public review. Nevertheless, for purposes of a conservative analysis, the City of Pittsburg recognizes that the California Code of Regulations¹⁴ were recently amended. Therefore, in the City's discretion as the lead agency, in an abundance of caution and to ensure full disclosure, this Draft Supplemental EIR includes consideration of potential air quality impacts utilizing the 2019 CEQA Guidelines Appendix G.

According to the 2019 *CEQA Guidelines* Appendix G, the following questions are analyzed and evaluated to determine whether impacts related to air quality are significant environmental effects. Would the proposed 2018 Project:

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

¹⁴ Pursuant to CEQA Guidelines Section 15007(a), the Guidelines have recently been amended. Subpart (c) of Section 15007 provides: "If a document meets the content requirements in effect when the document is set out for public review, the document shall not need to be revised to conform to any new content requirements in guideline amendments taking effect before the document is finally approved." Pursuant to subpart (b) of Section 15007, "Amendments to the guidelines apply prospectively only. New requirements in amendments will apply to steps in the CEQA process not yet undertaken by the date when agencies must comply with the amendments." Pursuant to subpart (d) of Section 15007, public agencies must comply with guideline amendments beginning with the earlier of the following two dates: the effective date of the agency's procedures to conform to the new guideline amendments, or 120 days after the amended guidelines become effective.

Approach to Analysis

Addressing the CEQA Guidelines questions generally requires the estimation of air emissions from the construction and operation of a project. Emissions are estimated using emission factors and activity levels. Emission factors represent the emission rate of a pollutant over a given time or activity; for example, grams of NO_x per vehicle mile traveled (VMT) or grams of NO_x per horsepower hour of equipment operation. The ARB has published emission factors for on-road mobile vehicles/trucks in the EMFAC mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. Activity levels are a measure of how active a piece of equipment is and can be represented as the amount of material processed, elapsed time that a piece of equipment is in operation, horsepower of a piece of equipment used, or VMT per day. An air emissions model combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment and land uses.

For purposes of this Draft Supplemental EIR, the California Emissions Estimator Model (CalEEMod) version 2016.3.2 was developed in collaboration with the South Coast Air Quality Management District and other air districts throughout the State as the preferred methodology for estimation emissions. The CalEEMod model is designed as a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with construction and operation from a variety of land uses.

The modeling analysis that follows employs the BAAQMD guidance where applicable from its *CEQA Air Quality Guidelines*. The models used in this analysis are summarized as follows:

- Construction criteria pollutant and precursor emissions: CalEEMod, version 2016.3.2
- Operational criteria pollutant and precursor emissions: CalEEMod, version 2016.3.2
- Construction TAC emission air dispersion assessment: EPA AERMOD dispersion model, version 18081

The following criteria air pollutants and precursors are assessed in this analysis:

- Reactive organic gases (ROG)
- Nitrogen oxides (NO_x)
- Carbon monoxide (CO)
- Particulate matter less than 10 microns in diameter (PM₁₀)
- Particulate matter less than 2.5 microns in diameter (PM_{2.5})

Note that the 2018 Project would emit ozone precursors ROG and NO_x during construction and operation. However, the 2018 Project would not directly emit ozone, since it is formed in the atmosphere during the photochemical reactions of the ozone precursors.

In evaluating whether changes to the 2018 Project (and/or changes in the circumstances surrounding the 2018 Project) as currently proposed would result in new significant environmental air quality impacts or an increase in severity of previously identified significant air quality impacts,

this Draft Supplemental EIR considers the incremental difference between the previously approved project as evaluated in the 2004 Final EIR and the proposed 2018 Project.

Therefore, the criteria pollutant emissions for the 2018 Project were compared to the estimates in the 2004 Final EIR to evaluate the net change in emissions. However, the 2004 Final EIR did not provide quantitative estimates for all impacts, including construction-related emissions and health risks. In the event that the 2004 Final EIR did not include quantitative estimates, this Draft Supplemental EIR evaluates the total increase in emissions associated with the 2018 Project.

Construction-related Criteria Pollutants

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from both on-site and off-site activities. On-site emissions consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM₁₀) from disturbed soil. Additionally, paving operations and application of architectural coatings would release ROG emissions. Off-site emissions result from motor vehicle exhaust from delivery vehicles, worker traffic and road dust (PM₁₀ and PM_{2.5}).

Schedule

The 2018 Project involves construction of single-family housing (along with 10 accessory dwelling units), as well as potential future commercial uses that may include retail, restaurants, and a grocery store,¹⁵ coupled with related on- and off-site improvements, as described more fully in Section 2.0 (Project Description). Accordingly, in addition to the residential portion of the 2018 Project, the analysis conservatively analyzed the future buildout of the 12-acre commercial portion of the 2018 Project with up to 140,000 square feet of commercial space, as well as parking areas. Construction assumptions are consistent with reasonably obtainable information available when environmental review commenced. Construction was assumed to take place five days per week and 8 hours per day commencing in June 2019 and end in December 2021, for a total duration of 31 months. Construction activities would include site preparation, grading, building construction, paving, and architectural coating. CalEEMod defaults were used for the construction equipment for each construction activity. The full construction schedule is shown in Table 3.1-7.

Table 3.1-7: Construction Schedule

Construction Activity	Assumed Construction Schedule		Working Days
	Start Date	End Date	
Site Preparation	06/01/2019	07/12/2019	30
Grading	07/13/2019	10/25/2019	75
Building Construction	10/26/2019	03/26/2021	370
Paving	10/15/2021	12/30/2021	55

¹⁵ To the extent these commercial uses would require additional land use entitlements, these would be considered by the City during a separate approval process. However, to ensure reasonable, good faith disclosure of all potential impacts relating to the 2018 Project, impacts relating to the potential future commercial component have been described and analyzed herein as required under CEQA.

Table 3.1-7 (cont.): Construction Schedule

Construction Activity	Assumed Construction Schedule		Working Days
	Start Date	End Date	
Architectural Coating	07/11/2020	12/30/2021	384

Source: FirstCarbon Solutions and CalEEMod, based on Project-specific information available when environmental review commenced.

Equipment Tiers and Emission Factors

Equipment tiers refer to a generation of emission standards established by the EPA and ARB that apply to diesel engines in off-road equipment. The “tier” of an engine depends on the model year and horsepower rating; generally, the newer a piece of equipment is, the greater the tier it is likely to have. Excluding engines greater than 750 horsepower, Tier 1 engines were manufactured generally between 1996 and 2003. Tier 2 engines were manufactured between 2001 and 2007. Tier 3 engines were manufactured between 2006 and 2011. Tier 4 engines are the newest, may incorporate hybrid electric technology, and were manufactured after 2007.

Construction emissions are generally calculated as the product of an activity factor and an emission factor. The activity factor for construction equipment is a measure of how active a piece of equipment is and can be represented as the amount of material processed, elapsed time that a piece of equipment is in operation, horsepower of a piece of equipment used, or the amount of fuel consumed in a given amount of time. The emission factor relates the process activity to the amount of pollutant emitted. Examples of emission factors include grams of emissions per miles traveled and grams of emissions per horsepower-hour. The operation of a piece of equipment is tempered by its load factor which is the average power of a given piece of equipment while in operation compared with its maximum rated horsepower. A load factor of 1.0 indicates that a piece of equipment continually operates at its maximum operating capacity. This analysis uses the CalEEMod default load factors for off-road equipment.

On-site Off-road Equipment

The CalEEMod contains built-in inventories of construction equipment for a variety of land use construction projects that incorporate estimates of the number of equipment, their age, their horsepower, and emission control equipment tier mix from which rates of emissions are developed. These inventories were developed based on construction surveys for several land use projects. Table 3.1-8 presents the construction equipment assumed to be used to construct the 2018 Project as derived from CalEEMod. The CalEEMod default emission control equipment tier mix was used in this analysis for the estimation of unmitigated emissions from on-site construction equipment.

Table 3.1-8: Project Construction Equipment Assumptions

Phase Name	Equipment	Number	Hours per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	3	8	247	0.40
	Tractors/Loaders/Backhoes	4	8	97	0.37
Grading	Excavators	2	8	158	0.38
	Graders	1	8	187	0.41
	Rubber Tired Dozers	1	8	247	0.40
	Scrapers	2	8	367	0.48
	Tractors/Loaders/Backhoes	2	8	97	0.37
Building Construction	Cranes	1	7	231	0.29
	Forklifts	3	8	89	0.20
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	3	7	97	0.37
	Welders	1	8	46	0.45
	Pavers	2	8	132	0.42
	Paving Equipment	2	8	80	0.36
	Rollers	2	8	80	0.38
	Tractors/Loaders/Backhoes	1	8	97	0.37
Architectural Coating	Air Compressors	1	6	78	0.48

Source: CalEEMod and FirstCarbon Solutions, see Appendix C.

Demolition, Site Preparation, and Grading

The project site is currently vacant and would not involve the demolition of any structures. Consistent with the 2004 Final EIR, the 2018 Project assumes that excavation and grading could occur on the project site. During grading activities, fugitive dust can be generated from the movement of dirt on the project site. CalEEMod estimates dust from dozers moving dirt around, dust from graders or scrapers leveling the land, and loading or unloading dirt into haul trucks. Each activity is calculated differently in CalEEMod, based on the number of acres traversed by the grading equipment.

Only some pieces of equipment are assumed to generate fugitive dust in CalEEMod. The CalEEMod model manual identifies various equipment and the acreage disturbed in an 8-hour day for each piece of equipment:

- Crawler tractors, graders, and rubber tired dozers: 0.5 acre per 8-hour day
- Scrapers: 1 acre per 8-hour day

Grading is expected to require the import of approximately 6,400 cubic yards of soil based on applicant-provided estimates. The haul trucks required to import this amount of soil were incorporated into the emission calculation.

Off-site On-road Vehicle Trips

The CalEEMod model defaults were used for vendor trips, trip length, and vehicle fleet (all heavy-duty trucks). The CalEEMod model run used the default worker trip length of 10.8 miles, vendor trip length of 7.3, and the hauling trip length of 20 miles. A summary of the construction-related trips is shown in Table 3.1-9.

Table 3.1-9: Construction Off-site Trips

Activity	Construction Trips per Day		Total Construction Trips
	Worker	Vendor	Haul
Site Preparation	18	0	0
Grading	20	0	800
Building Construction	507	192	0
Paving	15	0	0
Architectural Coating	101	0	0

Source: FirstCarbon Solutions and CalEEMod, see Appendix C.

Off-Gassing Materials

Asphalt paving and architectural coating materials used during construction would generate off-gas emissions of ROG. The data collection process determined the acres of asphalt paving required, which CalEEMod uses to determine associated ROG emissions. CalEEMod contains assumptions for application of architectural coatings that are based on the land use type and square footage of the buildings to be constructed and were used to quantify emissions.

Operation-related Criteria Pollutants

As a conservative estimate, operational emissions were analyzed assuming full-buildout of the 2018 Project in 2021. The analysis assumes operation of the entire project at the earliest possible dates. If construction and operation of any project components were delayed to later years, operational emissions would decrease due to improvements in technology, fleet turnover, and more stringent regulatory requirements.

On-road Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project site. The mobile source emissions from the 2018 Project depend on a number of factors including the number of trips a project would generate each day among other factors including trip distances and types of trips, and vehicle class (cars vs. trucks). The average daily trip generation rates for project operations were obtained from the project-specific traffic analysis performed consistent with Institute of Transportation Engineers (ITE) Manual, 10th Edition.

The CalEEMod trip purposes (e.g., primary, pass-by) and default round trip lengths for an urban setting for the San Francisco Air Basin portion of Contra Costa County were used in this analysis. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline and diesel-powered vehicles). The CalEEMod default vehicle fleet mix for Contra Costa County was used for this analysis.

Architectural Coatings

Paints release VOC/ROG emissions during application and drying. Given the nature of the proposed development, it is reasonable to assume that the buildings in the 2018 Project would be repainted on occasion. Based on CalEEMod defaults, it is assumed that the buildings would be recoated once every 10 years. While not directly applicable given the nature of the 2018 Project, compliance with BAAQMD Regulation 8, Rule 3, “Architectural Coatings—can be assumed to have occurred in connection with the architectural coatings that would be used.” This rule governs the manufacture, distribution, and sale of architectural coatings and limits the VOC content in paints and paint solvents, and the 2018 Project would be required to utilize paints and paint solvents that adhere to this rule.

Consumer Products

Consumer products are various solvents used in non-industrial applications, which emit VOCs during their product use. “Consumer Product” means a chemically formulated product used by household and institutional consumers, including but not limited to: detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. It does not include other paint products, furniture coatings, or architectural coatings.¹⁶ The default emission factor for Consumer Products developed for CalEEMod was used.

Landscape Equipment

CalEEMod was used to estimate the landscaping equipment emissions using the default assumptions in the model.

Electricity

Electricity used by the 2018 Project (for lighting, etc.) would result in emissions from the power plants that would generate electricity distributed on the electrical power grid. Off-site electricity emissions estimates are used only for the analysis of GHG emissions. The 2019 Building Energy Efficiency Standards will go into effect on January 1, 2020 for building permit applications submitted on or after that date. For any residential permits submitted after that date, the 2018 Project would be required to include the installation of solar panels on residential units, consistent with the applicable 2019 Building Energy Efficiency Standards.

¹⁶ California Air Resources Board (ARB). 2011. Regulation for Reducing Emissions from Consumer Products. Website: www.arb.ca.gov/consprod/regs/fro%20consumer%20products%20regulation.pdf. Accessed May 1, 2017.

Natural Gas

The 2018 Project would generate emissions from the combustion of natural gas for water heaters, heat, etc. CalEEMod has two categories for natural gas consumption: Title 24 and non-Title 24. Title 24 uses are defined as the major building envelope systems covered by the California Building Code Title 24 Part 6, such as space heating, space cooling, water heating, and ventilation. CalEEMod defaults were used in determining emissions in this category.

Toxic Air Contaminants

As explained above, TACs are air pollutants in miniscule amounts that, if a person is exposed to them, could increase the chances of experiencing health problems. Exposures to TAC emissions can have both chronic long-term (over a year or longer) and acute short-term (over a period of hours) health impacts. Construction-period TAC emissions could contribute to increased health risks to nearby residents or other sensitive receptors.

An assessment was made of the potential health impacts to surrounding sensitive receptors resulting from TAC emissions during project constructions. $PM_{2.5}$ health impacts are important; because their relatively small size, this particulate matter can be deposited deeply in the lungs causing respiratory effects. Compelling evidence suggests that $PM_{2.5}$ is by far the most harmful air pollutant in the SFBAAB in terms of the associated impact on public health. For purposes of this analysis, exhaust emissions of DPM, are represented as exhaust emissions of $PM_{2.5}$ consistent with BAAQMD recommendations. Although DPM is emitted by diesel-fueled, internal combustion engines, the composition of the emissions varies, depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

In addition, due to the proposed locations of new residential sensitive receptors that would occur with implementation of the 2018 Project, an assessment was also made of the potential health impacts to the 2018 Project's future residents by quantifying the cumulative health impacts from existing sources of TAC emissions within a 1,000-foot zone of influence from the project site. CEQA does not require this analysis (since it focuses on the existing environment's impact on the project rather than the project's impact on the environment); however, it is being included herein for informational purposes only.

Odors

The initial study published as part of the Notice of Preparation for this Draft SEIR concluded that potential impacts related to odors would be less than significant and no further analysis would be required.

Specific Thresholds of Significance

As discussed above, BAAQMD adopted thresholds of significance to assist lead agencies in the review of projects under CEQA in June 2010. The BAAQMD thresholds used in this Draft Supplemental EIR are more stringent than those recommended by BAAQMD for the 2004 Final EIR. Therefore, this represents a conservative approach to the analysis.

Consistency with Air Quality Plan

The applicable air quality plan is BAAQMD’s 2017 Bay Area Clean Air Plan, which identifies measures to:

- Reduce emissions and reduce ambient concentrations of air pollutants; and
- Safeguard public health by reducing exposure to the air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution.

The 2018 Project would be consistent with the Bay Area Clean Air Plan if it would support the plan’s goals, include applicable control measures from the Bay Area Clean Air Plan, and would not disrupt or hinder implementation of any control measures from the plan. Consistency with this plan is the basis for determining whether the 2018 Project would conflict with or obstruct implementation of an applicable air quality plan.

Ambient Air Quality (Criteria Pollutants)

Where available, the significance thresholds established by the applicable air quality management or air pollution control district may be relied upon to make the significance determinations. While the final determination of whether or not a project is significant is within the purview of the lead agency pursuant to CEQA Guidelines Section 15064(b), BAAQMD recommends that its quantitative and qualitative air pollution thresholds be used to determine the significance of project-related emissions.

In June 2010, BAAQMD adopted thresholds of significance to assist lead agencies in the review of projects under CEQA. These thresholds (see Table 3.1-10) were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA and included in BAAQMD’s current CEQA Guidelines (updated May 2017).¹⁷

Table 3.1-10: BAAQMD Thresholds of Significance

Pollutant	Construction Thresholds Average Daily Emissions	Operational Thresholds	
		Average Daily Emissions	Annual Average Emissions
Criteria Air Pollutants			
ROG	54 pounds/day	54 pounds/day	10 tons/year
NO _x	54 pounds/day	54 pounds/day	10 tons/year
PM ₁₀	82 pounds/day	82 pounds/day	15 tons/year
PM _{2.5}	54 pounds/day	54 pounds/day	10 tons/year
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	

¹⁷ Bay Area Air Quality Management District (BAAQMD). 2017. California Environmental Quality Act Air Quality Guidelines. May. Website: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en. Accessed September 22, 2018.

Table 3.1-10 (cont.): BAAQMD Thresholds of Significance

Pollutant	Construction Thresholds Average Daily Emissions	Operational Thresholds	
		Average Daily Emissions	Annual Average Emissions
Fugitive Dust	Construction Dust Ordinance or other Best Management Practices	Not Applicable	
Health Risks and Hazards for New Sources			
Excess Cancer Risk	10 per one million	10 per one million	
Chronic or Acute Hazard Index	1.0	1.0	
Incremental annual average PM _{2.5}	0.3 µg/m ³	0.3 µg/m ³	
Health Risks and Hazards for Sensitive Receptors (Cumulative from All Sources within 1,000-Foot Zone of Influence) and Cumulative Thresholds for New Sources			
Excess Cancer Risk	100 per 1 million		
Chronic Hazard Index	10.0		
Annual Average PM _{2.5}	0.8 µg/m ³		
Notes: ROG = reactive organic gases NO _x = nitrogen oxides PM ₁₀ = coarse particulate matter or particulates with an aerodynamic diameter of 10 µm or less PM _{2.5} = fine particulate matter or particulates with an aerodynamic diameter of 2.5 µm or less Source: Bay Area Air Quality Management District (BAAQMD). 2017. CEQA Air Quality Guidelines. May. Website: http://www.baaqmd.gov/~media/files/planning-and-research/ceqa/ceqa_guidelines_may_2017-pdf.pdf?la=en . Accessed September 22, 2018.			

In its discretion and based on substantial evidence in the record, the City has decided to utilize the BAAQMD thresholds for purposes of evaluating air quality impacts in this Draft SEIR.

Health Risk (Toxic Air Contaminants)

The air quality-related health risk significance thresholds utilized for this assessment were derived from the BAAQMD significance thresholds as project-specific thresholds, as the City has determined, in its discretion, these thresholds are appropriate for purposes of evaluating air quality impacts in this Draft SEIR. These thresholds are:

- Cancer Risk: 10 in one million
- Non-cancer Hazard Index: 1.0
- Annual PM_{2.5}: 0.3 µg/m³

Impact Evaluation

Consistency with Air Quality Management Plan

Impact AIR-1: **The 2018 Project would not conflict with or obstruct implementation of the applicable air quality plan.**

Summary of 2004 Final EIR

When the 2004 Final EIR was approved, the Bay Area was a designated nonattainment area for State and national ozone ambient air quality standards and as a nonattainment area for the State standards for PM₁₀. The applicable plan at the time of the 2004 Final EIR was the 1997 Clean Air Plan. No State PM₁₀ plan was prepared or required.

As explained in the 2004 Final EIR, projects that are consistent with the assumptions used in development of the 1997 Clean Air Plan are considered to not be in conflict with or otherwise obstruct the attainment of air quality levels identified in the relevant plan. Assumptions for emission estimates are based on population, employment, and land use projections taken from local and regional planning documents. As discussed in the 2004 Final EIR, the contemplated development of up to 563 housing units and 257,500 square feet of commercial building space was generally consistent with the 2001 City of Pittsburg General Plan land use designations and maximum development capacities. As a result, the City concluded that impacts would be less than significant.

Proposed 2018 Project Analysis and Conclusion

As explained in more detail above, the SFBAAB is designated as a nonattainment area for State standards for 1-hour and 8-hour ozone, 24-hour PM₁₀, annual PM₁₀, and annual PM_{2.5}.¹⁸ To address regional air quality standards, BAAQMD has adopted several air quality policies and plans, and in April 2017, BAAQMD adopted their *2017 Clean Air Plan*,¹⁹ which serves as the regional air quality plan (AQP) for the Air Basin for attaining federal ambient air quality standards. The *2017 Clean Air Plan* updates BAAQMD's *2010 Clean Air Plan*, pursuant to air quality planning requirements defined in the California Health & Safety Code. The primary goals of the *2017 Clean Air Plan* are to protect public health and protect the climate. The *2017 Clean Air Plan* acknowledges that BAAQMD's two stated goals of protection are closely related. As such, the *2017 Clean Air Plan* identifies a wide range of control measures intended to decrease both criteria pollutants²⁰ and GHGs²¹.

The *2017 Clean Air Plan* also accounts for projections of population growth provided by ABAG and vehicle miles traveled (VMTs) provided by the MTC, and identifies strategies to bring regional

¹⁸ Bay Area Air Quality Management District (BAAQMD). 2017. Air Quality Standards and Attainment Status. January. Website: <http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status>. Accessed May 22, 2017.

¹⁹ Bay Area Air Quality Management District (BAAQMD). 2017. Final 2017 Clean Air Plan. Website: 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 May 24, 2017.

²⁰ The EPA has established national ambient air quality standards (NAAQS) for six of the most common air pollutants—carbon monoxide, lead, ground-level ozone, particulate matter, nitrogen dioxide, and sulfur dioxide—known as “criteria” air pollutants (or simply “criteria pollutants”).

²¹ A greenhouse gas (GHG) is any gaseous compound in the atmosphere that is capable of absorbing infrared radiation, thereby trapping and holding heat in the atmosphere. By increasing the heat in the atmosphere, greenhouse gases are responsible for the greenhouse effect, which ultimately leads to global warming.

emissions into compliance with federal and State air quality standards. A project would be judged to conflict with or obstruct implementation of the *2017 Clean Air Plan* if it would result in substantial new regional emissions not foreseen in the air quality planning process.

BAAQMD does not provide a numerical threshold of significance for a project-level consistency analysis. Instead, BAAQMD recommends that the following criteria be used for determining a project's consistency with the Clean Air Plan.

- **Criterion 1:** Does the project support the primary goals of the *2017 Clean Air Plan*?
- **Criterion 2:** Does the project include applicable control measures from the *2017 Clean Air Plan*?
- **Criterion 3:** Does the project disrupt or hinder implementation of any *2017 Clean Air Plan* control measures?

Criterion 1

The primary goals of the *2017 Clean Air Plan* are to:

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

As discussed under Impact AIR-2, the 2018 Project would not create a violation of State or federal air quality standards during construction or operation. The proposed 2018 Project is, therefore, consistent with Criterion 1.

Criterion 2

The *2017 Clean Air Plan* contains 85 control measures aimed at reducing air pollutants at the local, regional, and global levels. Along with the traditional stationary, area, mobile source, and transportation control measures, the *2017 Clean Air Plan* contains a number of control measures designed to protect the climate and promote mixed use, compact development to reduce vehicle emissions and human exposure to pollutants from stationary and mobile sources.²² The *2017 Clean Air Plan* also includes an account of the implementation status of control measures identified in the *2010 Clean Air Plan*.

Given the nature of the 2018 Project, none of the stationary source control measures contained in the *2017 Clean Air Plan* are directly applicable; moreover the 2018 Project would be required to comply with any applicable rules and regulations adopted at the time of project construction and operations (e.g., Regulation 8, Rule 9). In addition, none of the mobile source measures or land use and local impact measures contained in the *2017 Clean Air Plan* directly apply to the 2018 Project because they would be implemented by federal, state or local jurisdictions. However, the 2018 Project supports implementation of a number of these measures through, among others, the

²² Bay Area Air Quality Management District (BAAQMD) 2017. Final 2017 Clean Air Plan. Website: 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 May 24, 2017.

location of the 2018 Project near public transit, the inclusion of sidewalks and other pedestrian/bicycle facilities, sufficient vehicular circulation within the project site, and efficient connection to existing roadways. Relative to the Energy and Climate measures contained in the *2017 Clean Air Plan*, the 2018 Project would be required to be consistent with all applicable measures, including:

- **Energy Efficiency:** The 2018 Project would be required to conform to the applicable energy efficiency requirements of the California Building Standards Code, also known as Title 24, as applied to residential land uses; at such time as the commercial component is constructed, it would also be subject to applicable then-current Title 24 requirements. Specifically, the 2018 Project must implement the requirements of the most recent Building Energy Efficiency Standards.
- **Renewable Energy.** Marin Clean Energy (MCE) would provide electricity service to the project site; however, the electricity is transmitted by Pacific Gas and Electric Company (PG&E). For the purposes of this analysis, PG&E is expected to provide natural gas service to the project site, and emission factors from PG&E are utilized. PG&E facilities include renewable, nuclear, natural gas, hydroelectric, and renewable facilities. PG&E's 2017 power mix consisted of nuclear generation (27.0 percent), large hydroelectric facilities (18.0 percent) and renewable resources (33.0 percent), such as wind, geothermal, biomass, and small hydro. The remaining portion came from natural gas (27.0 percent), and unspecified sources (21.0 percent).
- **Urban Heat Island Mitigation and Shade Tree Planting.** The 2018 Project would incorporate landscaping, including shade trees, throughout the developed portion of the project site. In addition, appropriate architectural and landscape treatment controls consistent with project approvals would be exercised to preserve the hillsides in their natural state.

The 2018 Project would not conflict with applicable measures under the *2017 Clean Air Plan* and is, therefore, consistent with Criterion 2.

Criterion 3

As discussed above with regard to Criterion 2, the 2018 Project would further the implementation of a number of control measures in the *2017 Clean Air Plan* and for those reasons, the 2018 Project characteristics would not create an impediment or disruption to implementation of any *2017 Clean Air Plan* control measures. The 2018 Project is, therefore, consistent with Criterion 3.

Overall Conclusion

Since the 2004 Final EIR, BAAQMD has adopted the 2017 Clean Air Plan: Spare the Air, Cool the Climate. The 2017 Clean Air Plan incorporates the level of development assumed in the 2001 City of Pittsburg General Plan, which is consistent with the level contemplated by the proposed 2018 Project. In fact, since the proposed 2018 Project contemplates the development of 346 housing units and 10 accessory dwelling units compared to 563 housing units under the 2004 Final EIR, the proposed 2018 Project would result in a decrease in development intensity compared to the 2004 Final EIR. Also, the proposed 2018 Project would result in a decrease in the total commercial floor

area from 257,000 square feet to approximately 140,000 square feet. Similar to the 2004 Final EIR, the proposed 2018 Project would result in a less than significant impact.

In reviewing the 2018 Project, which is consistent with but smaller than the original Vista Del Mar Project evaluated in the 2004 Final EIR, and utilizing the updated 2017 Clean Air Plan, this less than significant impact conclusion remains the same. Overall, the 2018 Project would be consistent with the three criteria for evaluating consistency with the 2017 Clean Air Plan. Therefore, the 2018 Project would not conflict with or obstruct implementation of the applicable air quality plan. The 2018 Project's impacts would be less than significant, similar to the conclusions in the 2004 Final EIR, and therefore no mitigation would be necessary. The 2018 Project would not result in new significant environmental impacts or create more severe significant environmental impacts than those analyzed in the 2004 Final EIR.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Potential for Air Quality Standard Violation

Impact AIR-2:	The 2018 Project would not 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.
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Summary of 2004 Final EIR

The 2004 Final EIR did not include a quantitative evaluation of construction-related exhaust emissions. As stated in the 2004 Final EIR, the project construction could result in elevated levels of particulate matter downwind of the construction activity, creating a possible nuisance at nearby properties. The 2004 Final EIR found that this could represent a potentially significant impact. Although construction activities would also result in other pollutant emissions, such as ROG and NO_x emissions, those emissions were not expected to impede attainment or maintenance of the CO or ozone standards.

The 2004 Final EIR determined that long-term operational emissions from the Vista Del Mar development could violate an ambient air quality standard or contribute substantially to an existing violation (Impact 15-2). Using the current model at the time of the analysis (ARB Urban Emissions Model [URBEMIS] 2002), the 2004 Final EIR found that the Vista Del Mar development would generate 119 pounds per day of ROG emissions, 121 pounds per day of NO_x emissions, and 113 pounds per day of PM₁₀ emissions. Those emissions exceeded the recommended threshold of 80 pounds per day. This would result in potentially significant impacts. The 2004 Final EIR Mitigation Measure 15-2 required the proposed on-site commercial components to implement strategies to reduce traditional vehicle

usage. However, even with implementation of 2004 Final EIR Mitigation Measure 15-2, the City concluded that impacts would be significant and unavoidable.

According to the 2004 Final EIR, BAAQMD guidance provides that projects that would individually have a significant regional air quality impact would also be considered to have a significant cumulative regional air quality impact. The development evaluated in the 2004 Final EIR exceeded the thresholds of significance, and therefore, the City concluded that there would be a significant and unavoidable impact.

Proposed 2018 Project Analysis and Conclusion

This analysis considers construction and operation period impacts separately, as described below.

Construction

Construction activities associated with the development contemplated by the 2018 Project would include site preparation, grading, paving, building construction, and painting. Construction activities would also temporarily create criteria pollutant emissions from equipment exhaust and other activities. Substantial air pollutant emissions would also include fugitive dust generated from site preparation and grading.

The 2018 Project is anticipated to begin in June of 2019 and last approximately 31 months. As discussed in the Project Description (Section 2.0), it is not clear when the commercial component will be constructed. However, the construction schedule used in the analysis (which assumes full buildout of all project components in 31 months) represents a reasonable “worst-case” analysis scenario since emission factors for construction equipment decrease as the analysis year increases, due to improvements in technology, equipment turnover, and more stringent regulatory requirements for new equipment. Therefore, construction emissions would decrease if the construction schedule moves to later years. The construction emissions modeling parameters and assumptions are provided in Appendix C. Table 3.1-11 summarizes the unmitigated annual and average daily emissions rates for construction of the 2018 Project.

Table 3.1-11: 2018 Project Construction Annual and Daily Average Emissions—Unmitigated

Construction Activity	Annual Emissions (tons/year)			
	ROG	NO _x	PM ₁₀ (exhaust)	PM _{2.5} (exhaust)
Site Preparation—2019	0.07	0.68	0.04	0.03
Grading—2019	0.18	2.17	0.09	0.08
Building Construction—2019	0.12	1.10	0.04	0.02
Building Construction—2020	0.60	5.56	0.16	0.15
Building Construction—2021	0.13	1.17	0.03	0.03
Paving—2021	0.05	0.36	0.02	0.02
Architectural Coating—2020	1.70	0.12	<0.01	<0.01

**Table 3.1-11 (cont.): 2018 Project Construction Annual and Daily Average Emissions—
Unmitigated**

Construction Activity	Annual Emissions (tons/year)			
	ROG	NO _x	PM ₁₀ (exhaust)	PM _{2.5} (exhaust)
Architectural Coating—2021	3.36	0.21	0.01	0.01
<i>Total Project Construction Emissions (tons)</i>	<i>6.21</i>	<i>11.38</i>	<i>0.40</i>	<i>0.37</i>
<i>Total Project Construction Emissions (lbs)</i>	<i>12,420</i>	<i>22,750</i>	<i>800</i>	<i>740</i>
Average Daily Emissions (lbs/day)¹	18.4	33.7	1.2	1.1
BAAQMD Average Daily Construction Emission Thresholds (lbs/day)	54	54	82	54
Exceeds thresholds?	No	No	No	No
Notes: ¹ The average daily construction emissions were estimated based on the total annual emissions divided by the number of working days (675 working days). ROG = reactive organic gases; NO _x = oxides of nitrogen PM ₁₀ = particulate matter 10 microns in diameter PM _{2.5} = particulate matter 2.5 microns in diameter Totals may not appear to add exactly due to rounding. Source: Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines 2017; CalEEMod Output (Appendix C).				

As mentioned above, the 2004 Final EIR did not provide a quantitative estimate of construction emissions, but concluded that ROG, NO_x and CO emissions would not result in a significant impact. The 2018 Project is similar to the proposal studied in the 2004 Final EIR but smaller in size. Furthermore, updated air quality standards have been used to ensure a conservative analysis.

As shown in Table 3.1-11, the 2018 Project's maximum daily construction emissions would not exceed BAAQMD's recommended thresholds of significance.

Considering that the 2018 Project's short-term construction emissions would not exceed any significance thresholds, the 2018 Project would not 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. This construction impact would be less than significant.

Operation

After construction of the 2018 Project is complete, operational emissions were assumed to begin in the year 2021. The trip generation rates for proposed and existing land uses are from the project-specific transportation impact study (found in Appendix F). As noted above, for purposes of a conservative analysis, the year 2021 was used as the operational year for the 2018 Project. All assumptions and parameters are detailed in Appendix C. Table 3.1-12 shows the unmitigated annual operational-related emissions for the 2018 Project. The average daily operational-related emissions for the 2018 Project are shown in Table 3.1-13.

Table 3.1-12: 2018 Project Operation Annual Emissions (Unmitigated)

Emission Source	Annual Emissions (tons/year)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Area	3.43	0.07	0.02	0.02
Energy	0.06	0.52	0.04	0.04
Mobile	2.06	8.85	5.57	1.53
<i>Total Project Operational Emissions</i>	<i>5.56</i>	<i>9.43</i>	<i>5.63</i>	<i>1.59</i>
BAAQMD Maximum Annual Emission Threshold	10	10	15	10
Exceeds thresholds?	No	No	No	No
Notes: ROG = reactive organic gases NO _x = oxides of nitrogen PM ₁₀ = particulate matter 10 microns in diameter PM _{2.5} = particulate matter 2.5 microns in diameter Source of emissions: CalEEMod Output (Appendix CC).				

Table 3.1-13: 2018 Project Operation Average Daily Emissions (Unmitigated)

Parameters	Average Daily Emissions (pounds/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Annual Emissions ¹ (tons/year)	5.56	9.43	5.63	1.59
Annual Emissions ² (lbs/year)	11,120	18,860	11,260	3,180
Average Daily Emissions³ (lbs/day)	30.5	51.7	30.8	8.7
2004 Final EIR Project	119	121	113	—
Net Change	(89.5)	(69.3)	(82.2)	—
BAAQMD Average Daily Emission Thresholds (lbs/day)	54	54	82	54
Exceeds thresholds?	No	No	No	No
Notes: ¹ The 2018 Project emissions are shown in Table 3.1-14. ² Pounds per year were calculated using the unrounded annual 2018 Project emissions. ³ The average daily construction emissions for the 2018 Project were estimated based on the total annual emissions divided by the number of days in 2021 (365 days). ROG = reactive organic gases NO _x = oxides of nitrogen PM ₁₀ = particulate matter 10 microns in diameter PM _{2.5} = particulate matter 2.5 microns in diameter Source of emissions: CalEEMod Output (Appendix CC).				

As shown in Table 3.1-13, the 2004 Final EIR found that the Vista Del Mar development would generate 119 pounds per day of ROG emissions, 121 pounds per day of NO_x emissions, and 113 pounds per day of PM₁₀ emissions. The 2018 Project would generate 30.5 pounds per day of ROG emissions, 51.7 pounds per day of NO_x emissions, and 30.8 pounds per day of PM₁₀ emissions. Therefore, the 2018 Project would result in a net decrease in emissions from the estimates included in the 2004 Final EIR. As shown in Table 3.1-12 and Table 3.1-13, the 2018 Project's annual and daily operational emissions would not exceed BAAQMD's thresholds of significance. Therefore, operation of the 2018 Project would not 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. This operational impact would be less than significant.

Overall Conclusion

Both the construction and operational emissions for the 2018 Project would not exceed BAAQMD's thresholds of significance. Therefore, the 2018 Project would not 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, and impacts would be less than significant. The 2004 Final EIR concluded that operational impacts would be significant and unavoidable, even after the implementation of 2004 Final EIR Mitigation Measure 15-2. Considering that the 2018 Project would result in a less than significant impact, the 2018 Project would not result in new significant environmental impacts or create more severe significant environmental impacts than those analyzed in the 2004 Final EIR.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

None.

Level of Significance After Mitigation

Less than significant impact.

Sensitive Receptors Exposure to Pollutant Concentrations

Impact AIR-3: The 2018 Project would expose sensitive receptors to substantial pollutant concentrations.

Summary of 2004 Final EIR

The 2004 Final EIR discussed construction activities, such as excavation and grading operations, that would generate exhaust emissions and fugitive particulate matter emissions that could result in elevated levels of particulate matter, creating a possible nuisance at residential, school, and other nearby properties. This represents a potentially significant impact. The City concluded that implementation of the control measures included in 2004 Final EIR Mitigation Measure 15-1 would be expected to reduce this impact to a less-than-significant level.

The 2004 Final EIR found that construction diesel emissions were temporary, affecting an area for a period of weeks or months, and because of the duration of construction activities, health risks due to emissions of DPM from construction equipment would be less than significant.

Proposed 2018 Project Analysis and Conclusion

This impact evaluates the potential for the 2018 Project's construction and operational emissions to expose sensitive receptors to substantial pollutant concentrations of asbestos, CO, or other TACs of concern (including DPM).

Two scenarios have the potential for exposing sensitive receptors to TACs, although only one is technically the subject of CEQA review, except under very limited circumstances not relevant here. The first is when a project includes a new or modified source of TACs and would be located near an existing or proposed sensitive receptor; the second scenario involves a residential or other sensitive receptor development locating near an existing or planned source of TACs. BAAQMD defines sensitive receptors as children, adults, and seniors occupying or residing in residential dwellings, schools, day care centers, hospitals, and senior-care facilities.

As a proposed mixed-use development with a residential component, the residential uses that would occur with implementation of the 2018 Project itself would be considered a sensitive receptor land use. In addition, existing residences are located along the western boundary of the project site and across West Leland Road near to the south of the project site. In the following analysis, the 2018 Project's construction and operational emissions were evaluated as to potential impacts of the 2018 Project's emissions on the sensitive receptors surrounding the project site. In addition, although not required under CEQA, for informational purposes, the potential health impacts from surrounding existing sources of TAC emissions on the 2018 Project's sensitive receptors were also examined.

Construction

Construction Fugitive Dust

The 2004 Final EIR concluded that impacts related to construction fugitive dust would be potentially significant, and included MM 15-1, which required implementation of specific dust control measures that were found to reduce potential impacts to less than significant. This Draft SEIR refines the language of the 2004 measure to reflect current best practices as defined by the BAAQMD.

Construction activities associated with development activities contemplated by the 2018 Project would include site preparation, grading, building construction, paving, and architectural coating. Generally, the most substantial air pollutant emissions would be dust generated from site grading. If uncontrolled, these emissions could lead to both health and nuisance impacts. Construction activities would also temporarily create emissions of equipment exhaust and other air contaminants.

BAAQMD does not recommend a numerical threshold for fugitive dust-related particulate matter emissions. Instead, BAAQMD bases the determination of significance for fugitive dust on a consideration of the control measures to be implemented. If all appropriate emissions control measures recommended by BAAQMD are implemented for a project, then fugitive dust emissions during construction are not considered significant. The City, in its discretion and based on

substantial evidence in the record, has decided to adopt this approach for purposes of addressing these construction-related impacts.

Mitigation Measure (MM) AIR-1 reflects the updated best practices for fugitive dust control recommended by BAAQMD, thereby ensuring that this impact would remain less than significant with mitigation. The conclusions from the 2004 Final EIR remain unchanged.

Project-Specific Construction Toxic Air Pollutants

The 2004 Final EIR did not include a health risk assessment, but rather based the findings of health risk during construction on a qualitative analysis. The 2004 Final EIR concluded that construction diesel emissions were temporary, affecting an area for a period of weeks or months, and because of the duration of construction activities, health risks due to emissions of DPM from construction equipment would be less than significant.

The construction of the 2018 Project would result in the emissions of TACs principally from the operation of off-road construction equipment and on-road construction vehicle traffic. TACs are the air pollutants of most concern as it relates to sensitive receptors, as they have the greatest potential to pose a carcinogenic and non-carcinogenic (such as asthma and bronchitis) hazard to human health. The ARB has determined that DPM poses the greatest airborne health concern to the population of the State from all types of TACs.

The construction schedule of approximately 31 months for the 2018 Project is substantially shorter than the construction schedule of 6 to 15 years that was assumed in the 2004 EIR. However, rather than using a qualitative analysis to evaluate the 2018 Project's impacts, a health risk assessment (HRA) was prepared to assess the potential impact of the 2018 Project's TAC emissions to public health consistent with current recommended methodology, and to compare these findings with the impact conclusions in the 2004 Final EIR. A HRA is a guide that helps to determine whether current or future exposures to a chemical or substance in the environment could affect the health of a population. In general, risk depends on the following factors:

- Identity of the TACs that may be present in the air;
- Estimate of the amount of TACs released from all sources, or the source of particular concern, using air samples or emission models;
- Estimate of the concentrations of TACs in the air in the geographic area of concern by using dispersion models with information about emissions, source locations, weather, and other factors; and
- Estimate of the exposure levels and consequential health risks to the people exposed to different concentrations of TACs at different geographic locations.

BAAQMD has defined health risk significance thresholds as shown in Table 3.1-10, above. These thresholds identified "excess cancer risk" to the public and the non-cancerous "chronic hazard" from exposures to TACs. "Excess cancer" risk represents the probability (in terms of risk per million individuals) that an individual would contract cancer resulting from exposure to TACs continuously

over a period of several years. The City, in its discretion, has decided to utilize these thresholds in this analysis. “Chronic hazard” risk represents effects that may result from long-term exposure to a hazardous material and can include organ or systemic damage.

Estimation of Construction DPM Emissions

For construction, the principal TAC emission analyzed in this assessment was DPM from the operation of off-road equipment and diesel-powered delivery, as well as worker commute vehicles during construction. For purposes of this analysis, DPM is represented as exhaust emissions of PM_{2.5} in accordance with guidance from BAAQMD.

Construction of the 2018 Project is assumed to last for approximately 31 months. In assessing construction impacts, the construction DPM emissions are assumed to be distributed over the entire project area affected by construction activity with a working schedule of 8 hours per day and 5 days per week.

Construction DPM emissions (as PM_{2.5} exhaust) were estimated using CalEEMod (version 2016.3.2) and are summarized in Table 3.1-14 below.

Table 3.1-14: 2018 Project Construction DPM (as PM_{2.5} Exhaust Emissions)

Year	On-site DPM (tons/year)	Off-site DPM ⁽¹⁾ (tons/year)	Total DPM Emissions (tons/year)
2019	0.144	0.005	0.149
2020	0.144	0.018	0.162
2021	0.058	0.002	0.060

Note:

⁽¹⁾ Emissions along the route from SR-4, San Marco Boulevard, Bailey Road, and West Leland Road to the project site. Source: CalEEMod and FCS; see Appendix C.

Estimation of Excess Cancer Risks

BAAQMD has developed a set of guidelines for estimating cancer risks that provide adjustment factors that emphasize the increased sensitivities and susceptibility of sensitive receptors, particularly young children, to exposures to TACs.²³ These adjustment factors include age-sensitivity weighting factors, age-specific daily breathing rates, and age-specific time-at-home factors. The recommended method for the estimation of cancer risk is shown in the equations below, with the cancer risk adjustment factors provided in Table 3.1-15 for several types of sensitive/residential receptors (infant, child, and adult). The City, in its discretion, has decided to utilize these thresholds in this analysis.

$$\text{Cancer Risk} = C_{\text{DPM}} \times \text{Inhalation Exposure Factor} \quad (\text{EQ-1})$$

²³ Bay Area Air Quality Management District (BAAQMD). 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. Website: http://www.baaqmd.gov/~media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en.

Where:

Cancer Risk = Total individual excess cancer risk defined as the cancer risk a hypothetical individual faces if exposed to carcinogenic emissions from a particular source for specified exposure durations; this risk is defined as an excess risk because it is above and beyond the background cancer risk to the population; cancer risk is expressed in terms of risk per million exposed individuals.

C_{DPM} = Period average DPM air concentration calculated from the air dispersion model in $\mu\text{g}/\text{m}^3$

Inhalation is the most important exposure pathway to impact human health from DPM and the inhalation exposure factor is defined as follows:

$$\text{Inhalation Exposure Factor} = \text{CPF} \times \text{EF} \times \text{ED} \times \text{DBR} \times \text{AAF}/\text{AT} \quad (\text{EQ-2})$$

Where:

- CPF = Inhalation cancer potency factor for the TAC: $1.1 \text{ (mg/kg-day)}^{-1}$ for DPM
- EF = Exposure frequency (days/year)
- ED = Exposure duration (years of construction)
- AAF = set of age-specific adjustment factors that include age sensitivity factors (ASF), daily breathing rates (DBR), and time at home factors (TAH)—see Table 3.1-15
- AT = Averaging time period over which exposure is averaged (days)

The California Office of Environmental Health Hazards Assessment (OEHHA) recommended values for the various cancer risk parameters shown in EQ 2, above, are provided in Table 3.1-15.

Table 3.1-15: Exposure Assumptions for Cancer Risk

Receptor Type	Exposure Frequency		Exposure Duration (years) ⁽²⁾	Age Sensitivity Factors	Time at Home Factor (%)	Daily Breathing Rate ⁽¹⁾ (l/kg-day)
	Hours/day	Days/year				
Sensitive/Residential—Infant						
3 rd Trimester	24	350	0.25	10	85	361
0–2 years	24	350	2	10	85	1,090
Sensitive Receptor—Child						
3–16 years	24	350	3	3	72	572
Sensitive Receptor—Adult						
> 16 to 30 years	24	350	3	1	73	261
Notes:						
⁽¹⁾ The daily breathing rates recommended by BAAQMD for sensitive/residential receptors assume the 95 th percentile breathing rates for all individuals less than 2 years of age and 80 th percentile breathing rates for all older individuals.						
⁽²⁾ The actual duration of the exposure is 31 months, the duration of the construction						
(l/kg-day) = liters per kilogram body weight per day						
Source: Bay Area Air Quality Management District (BAAQMD) 2016. Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines. Website: http://www.baaqmd.gov/~media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en						

Estimation of Non-Cancerous Chronic Hazards

An evaluation of the potential non-cancer effects of chronic chemical exposures was also conducted. Adverse health effects are evaluated by comparing the annual receptor concentration of each chemical compound with the appropriate REL. Available RELs promulgated by the OEHHA were considered in the assessment.

Risk characterization for non-cancer health hazards from TACs is expressed as a hazard index (HI). The HI is a ratio of the predicted concentration of the 2018 Project's emissions to a concentration considered acceptable to public health professionals, termed the REL.

To quantify non-carcinogenic impacts, the HI approach was used.

$$HI = C_{ann}/REL \quad (EQ-3)$$

Where:

HI = chronic hazard index

C_{ann} = annual average concentration of TAC as derived from the air dispersion model ($\mu\text{g}/\text{m}^3$)

REL = reference exposure level above which a significant impact is assumed to occur ($\mu\text{g}/\text{m}^3$)

The HI assumes that chronic exposures to TACs adversely affect a specific organ or organ system (toxicological endpoint) of the body. For each discrete chemical exposure, target organs presented in regulatory guidance were used. To calculate the HI, each chemical concentration or dose is divided by the appropriate toxicity REL. For compounds affecting the same toxicological endpoint, this ratio is summed. Where the total equals or exceeds 1, a health hazard is presumed to exist. For purposes of this assessment, the TAC of concern is DPM, for which the OEHHA has defined a REL for DPM of $5 \mu\text{g}/\text{m}^3$. The principal toxicological endpoint assumed in this assessment was through inhalation.

Air Dispersion Modeling

An air dispersion model is a mathematical formulation used to estimate the air quality impacts at specific locations (receptors) surrounding a source of emissions given the rate of emissions and prevailing meteorological conditions. The air dispersion model applied in this assessment was the EPA AERMOD (version 1801) air dispersion model that is approved by BAAQMD for air dispersion assessments. Specifically, the AERMOD model was used to estimate levels of air emissions at sensitive receptor locations from the 2018 Project's construction $\text{PM}_{2.5}$ exhaust. The use of the AERMOD model provides a refined methodology for estimating construction impacts by utilizing long-term, measured representative meteorological data for the project site and a representative construction schedule.

Terrain elevations were obtained for the project site using the AERMAP model, the AERMOD terrain data pre-processor. The urban dispersion option was used to describe the air dispersion in the local vicinity of the project site. The air dispersion model assessment used meteorological data provided by BAAQMD for a meteorological station located at the PG&E facility in Pittsburg, which is

approximately 2.2 miles northeast of the project site. These meteorological data are considered representative of the meteorological conditions at the project site.

The modeling utilized two area sources to represent the on-site construction emissions, one for exhaust emissions and one for fugitive dust emissions. To represent the construction equipment exhaust emissions, an emission release height of 5 meters (16.4 feet) was used for the construction equipment area source. The elevated source height reflects the height of the equipment exhaust stacks plus an additional distance above the exhaust stacks to account for the additional plume rise of the hot exhaust gases. For modeling fugitive PM_{2.5} emissions, a near-ground level release height of 1 meter (3.3 feet) was used for the area source. Emissions from the offroad construction haul trucks, vendor trucks, and worker vehicles were represented in the dispersion model as a line source that extended from SR-4 along San Marcos Boulevard, Bailey Road, and West Leland Road to the project site. Construction emissions were modeled as occurring daily between 7:00 a.m. to 3:00 p.m., when of construction activities could occur.

Receptors are locations where the impacts from the 2018 Project’s emissions are calculated. The ARB has identified the following persons who are most likely to be affected by air pollution: (i.e. sensitive receptors) children under 16 years of age, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. The closest off-site sensitive receptors to the project site are residences located to the west and south of the project across West Leland Road, some of which are less than 15 feet from the boundary of the project site.

The estimated health and hazard impacts at the maximum impacted sensitive receptor (MIR) from the 2018 Project’s construction emissions are provided in Table 3.1-16. The MIR was determined to be an existing residence located adjacent to the northwest corner of the project site.

Table 3.1-16: 2018 Project Construction Health Risks and Hazards (Unmitigated)

Health Impact Metric	Cancer Risk (risk per million)	Chronic Non-Cancer Hazard Index ⁽²⁾	Annual PM _{2.5} Concentration (µg/m ³)
Risks and Hazards at the Maximum Impacted Sensitive Receptor (MIR): Infant ⁽¹⁾	15.9	0.01	0.13
Risks and Hazards at the MIR: Child ⁽¹⁾	2.0		
Risks and Hazards at the MIR: Adult ⁽¹⁾	0.3		
BAAQMD Significance Threshold	10.0	1.0	0.3
Exceeds Individual Source Threshold?	Yes	No	No
Notes: ¹ The MIR is an existing residence located adjacent to the northwest corner of the project site. ² Chronic non-cancer hazard index was estimated by dividing the annual DPM concentration (as PM _{2.5} exhaust) by the REL of 5 µg/m ³ . Source: CalEEMod and FCS; see Appendix C.			

As noted in Table 3.1-16, the DPM concentration during construction of the 2018 Project would exceed the cancer risk significance thresholds adopted for this assessment at the MIR for the infant exposure sensitive receptor group and, thus, would result in a potentially significant impact to nearby sensitive receptors prior to the application of mitigation measures during construction. Therefore, mitigation would be required to reduce the 2018 Project’s health risk impacts during the construction phase of development. Specifically, mitigation measure (MM) AIR-2 is required to reduce impacts to the maximum extent feasible. MM AIR-2 requires Tier 3 engines for all on-site equipment greater than 50 horsepower to be used during construction of the 2018 Project. Table 3.1-17 shows the health risks and non-cancer hazard index for construction of the 2018 Project with implementation of Tier 3 construction equipment, as required by MM AIR-2. As noted in Table 3.1-17, the 2018 Project’s construction impacts with mitigation would result in cancer risks that do not exceed the BAAQMD cancer risk significance threshold and, thus, would result in a less than significant impact.

Table 3.1-17: 2018 Project Construction Health Risks and Hazards (Mitigated)

Health Impact Metric	Cancer Risk (risk per million)
Risks and Hazards at the MIR: Infant ⁽¹⁾	8.3
BAAQMD Significance Threshold	10.0
Exceeds Individual Source Threshold?	No
Notes: ⁽¹⁾ The maximum impacted sensitive receptor (MIR) is an existing residence located adjacent to the project site on the west, north of West Leland Road. Source: CalEEMod and FCS; see Appendix C.	

Naturally Occurring Asbestos

This issue was not addressed in the 2004 Final EIR.

A review of the map containing areas more likely to have rock formations containing naturally occurring asbestos in California indicates that there are no areas likely containing naturally occurring asbestos in the immediate vicinity of the project site.²⁴ Therefore, it can be reasonably concluded that the 2018 Project would not expose sensitive receptors to naturally occurring asbestos during project construction. Impacts would be less than significant.

Operation

Project-Specific Operational Toxic Air Pollutants

The 2004 Final EIR did not include an analysis of operational TAC emissions.

²⁴ United States Geological Survey (USGS). 2011. Van Gosen, B.S., and Clinkenbeard, J.P. California Geological Survey Map Sheet 59. Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California. Open-File Report 2011-1188 Website: <http://pubs.usgs.gov/of/2011/1188/>. Accessed December 2017.

As shown in Impact AIR-2 (Table 3.1-12 and Table 3.1-13), the majority of emissions generated from long-term operations of the 2018 Project would be categorized as mobile-source emissions. The 2018 Project is estimated to generate a net 8,370 new daily trips, as provided by the project-specific transportation impact assessment (Appendix F). This is compared to the original Alves Ranch Project studied in the 2004 Final EIR, which would have generated 13,374 new daily trips. The majority of these trips would consist of residents, as well as commercial store employees and visitors traveling to and from the project site, predominately in passenger vehicles. Because most passenger vehicles are gasoline-combusted (approximately 99 percent of all passenger vehicles), the 2018 Project would not generate significant amount of DPM emissions during operation. Some DPM emissions would occur during the operation of the commercial component of the 2018 Project from delivery trucks. However, based on similar types of projects, the number of delivery truck trips would likely amount to 15 to 20 per week. Therefore, the 2018 Project would not result in significant health impacts on sensitive receptors during operations.

Carbon Monoxide Hot Spot Analysis

The 2004 Final EIR analyzed CO concentrations at the three worst intersections and found that the project would not result in significant impact for CO hotspots.

The 2018 Project's traffic study includes an analysis on impacted intersections. Localized high levels of CO (CO "hotspots") are associated with traffic congestion and idling or slow-moving vehicles. BAAQMD recommends a screening analysis to determine if a project has the potential to contribute to a CO hotspot. The screening criteria identify when site-specific CO dispersion modeling is not necessary. The 2018 Project would result in a less than significant impact to air quality for local CO if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans; or
- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour; or
- The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The Contra Costa County Transportation Authority (CCTA) serves as the Congestion Management Agency (CMA) for Contra Costa County. CCTA is a joint powers agency that oversees Contra Costa County's short- and long-term regional transportation planning. As the Congestion Management Agency, CCTA must, under State law, prepare a Congestion Management Program (CMP) and update it every 2 years. The CMP is meant to outline the CCTA strategies for managing the performance of the regional transportation within the County. A CMP must contain several components: traffic level of service standards for State highways and principal arterials; multi-modal performance measures to evaluate current and future systems; a 7-year capital program of proposed projects to maintain or

improve the performance of the system or mitigate the regional impacts of land use proposed projects; a program to analyze the impacts of land use decisions; and a travel demand element that promotes transportation alternatives to the single-occupant vehicle. The county's first CMP was adopted in October 1991. The latest CMP, the *2017 Contra Costa CMP*, comprises the 13th biennial update.

According to the project-specific transportation impact assessment (see Appendix F), the applicable congestion management program facility is nearby SR-4. The inclusion of the additional traffic by the 2018 Project to existing freeway conditions would increase the level of current operational deficiencies during both the AM and PM peak-hour segments, as well as HOV lane segments. Caltrans plans to increase vehicle capacity along SR-4, which would extend the high occupancy vehicle lane and add an additional mixed-flow lane in each direction; the expected completion would occur in 2021/2022. Additionally, CCTA has developed the SR-4 Integrated Corridor Management (ICM) Plan that includes various strategies to reduce traffic congestion. The 2018 Project would implement MM TRANS-4, which would require the project applicant to pay all applicable adopted local and regional transportation impact fees at the time building permits are sought.

In addition, the 2018 Project would not increase traffic volumes at the affected project intersections to more than 44,000 vehicles per hour. Based on the traffic impact assessment prepared for the 2018 Project, the intersection of Bailey Road and West Leland Road would experience the highest cumulative peak-hour traffic volumes among the 2018 Project study intersections, with 6,534 vehicles per hour during the PM peak-hour; this would represent approximately one-seventh and one-fourth of the second and third screening criteria thresholds, respectively. As such, the anticipated vehicle volume at the highest volume intersection would be significantly less than BAAQMD's second and third screening criteria of 44,000 vehicles per hour and 24,000 vehicles per hour.

Additionally, since the background concentrations are so low compared to the ambient air quality standards, CO concentrations have not been monitored at any location in the project vicinity over the past 3 years, as indicated in Table 3.1-6. The 2004 Final EIR analyzed CO concentrations at the three worst intersections and found that the project would not result in significant impact for CO hotspots. Based on the traffic volumes at the intersections affected by the 2018 Project and the background concentrations as compared to the applicable screening criteria, the 2018 Project would not be anticipated to result in CO hotspots during project operations. Therefore, operational CO hotspot impacts would be less than significant. Considering that the 2018 Project would result in a less than significant impact, the 2018 Project would not result in new significant environmental impacts or create more severe significant environmental impacts than those analyzed in the 2004 Final EIR.

Cumulative Health Risk Impacts

The 2004 Final EIR did not include an analysis of cumulative health risks.

BAAQMD recommends assessing the potential cumulative impacts from sources of TACs within 1,000 feet of a project combined with the project. The City, in its discretion, has decided to utilize these thresholds in this analysis. Therefore, for the 2018 Project, the cumulative impact assessment quantified the cumulative impacts from TAC emission sources located within 1,000 feet of the project

site, combined with the 2018 Project TAC emissions. For the cumulative analysis, BAAQMD provides three tools for use in screening the potential impacts from sources of TACs. These tools are:

- Surface Street Screening Tables.** BAAQMD pre-calculated potential cancer risks and PM_{2.5} concentration increases for each county within their jurisdiction. The look-up tables are used for roadways that meet BAAQMD’s “major roadway” criteria of 10,000 vehicles or 1,000 trucks per day. Risks are assessed by roadway volume, roadway direction, and distance to sensitive receptors. The most current traffic count data from the City of Pittsburg is from 2006 and shows a traffic volume of 9,034 vehicles per day along West Leland Road from Bailey Road west to the city limits. However, invariably, traffic volumes have increased along West Leland Road with increased development in the area. Therefore, for purposes of ensuring a conservative analysis, an approximate estimate of current daily traffic volumes was made using the traffic information contained in the 2018 Project’s Traffic impact Assessment (see Appendix F). Using this information, the daily traffic volumes along West Leland Road were estimated to be approximately 18,000 vehicles per day. The potential health impacts from vehicle travel along West Leland Road were included in this analysis.
- Freeway Screening Analysis Tool.** BAAQMD prepared a Google Earth file that contains pre-estimated cancer risk, hazard index, and PM_{2.5} concentration increases for highways within the Bay Area. Risks are provided by roadway link and are estimated based on elevation and distance to the sensitive receptor. SR-4 is located adjacent to and north of the project site and its potential health impacts on the 2018 Project and at the MIR were analyzed.
- Stationary Source Risk and Hazard Screening Tool.** BAAQMD prepared a Google Earth file that contains the locations of all stationary sources within the Bay Area that have BAAQMD permits. For each emissions source, BAAQMD provides conservative cancer risk and PM_{2.5} concentration increase values. There are no stationary sources identified by this screening tool that are located within approximately 1,000 feet of the project site.

Table 3.1-18 identifies the TAC emission sources analyzed in this assessment. Note that there is a rail line that traverses along the middle of SR-4.

Table 3.1-18: Existing TAC Emission Sources Near the Project Site

Source	Type	Location
SR-4	Freeway	Adjacent to the northern project boundary
West Leland Road	Surface Street	Adjacent to the southern project boundary
<p>Note: There is a rail line that traverses along the middle of SR-4; this is the Bay Area Rapid Transit (BART) Yellow Line that operates electric powered trains, and hence, is not considered a major generator of TAC emissions. Source: see Appendix C</p>		

Construction

Table 3.1-19 lists the cumulative health impacts at the MIR estimated to occur during construction of the 2018 Project. As shown below, the cumulative health impacts to the 2018 Project’s MIR from

existing TAC emission sources located within 1,000 feet of the project site and the 2018 Project’s construction emissions would not exceed BAAQMD’s cumulative health significance thresholds.

Table 3.1-19: Cumulative Construction Health Impacts at the MIR

Source	Source Type	Distance from MIR (feet) ⁽¹⁾	Cancer Risk (per million)	Chronic Non-Cancer HI	PM _{2.5} Concentration (µg/m ³)
Project					
2018 Project	Construction DSL Vehicles	25	15.9	<0.01	0.13
Freeways					
SR-4	Vehicle Traffic	206	34.1	0.007	0.25
Local Road⁽⁴⁾ (>10,000 AADT)					
West Leland Road	Local road	250	0.9	ND	0.02
Cumulative Health Risks from Project Construction and Existing TAC Sources					
Cumulative Total with 2018 Project Construction ⁽¹⁾			50.9	0.02	0.40
BAAQMD Cumulative Thresholds of Significance			100	10	0.8
Threshold Exceedance?			No	No	No
Notes: ⁽¹⁾ The MIR is a residence located along the northwest boundary of the project site, adjacent to the project site. ⁽²⁾ Cancer risks reflect the 2010 BAAQMD cancer risk guidance and with mitigation ⁽³⁾ The cancer risks screening analysis for stationary sources, roadways and highways sources updated in 2011 use the 2010 BAAQMD Health Risks Guidance. The cancer risks were corrected by a factor of 1.12 to incorporate the latest 2016 cancer risk guidance published by BAAQMD that includes the latest assumptions on estimation of cancer risks for a 30-year exposure duration. http://www.baaqmd.gov/~media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en MIR = maximum impacted sensitive receptor NA = not available ND = no data available AADT = annual average daily traffic Source: FCS, 2018; see Appendix C.					

Operations

The 2004 Final EIR did not include an analysis of impacts to proposed sensitive receptors located on the project site.

The 2018 Project would locate new sensitive receptors (residents) that could be subject to existing sources of TACs at the project site. However, the California Supreme Court in *California Building Industry Association v. BAAQMD* concluded that agencies subject to CEQA are not required to analyze the impact of existing environmental conditions on a project’s future users or residents except under limited circumstances that are not relevant here. Therefore, impacts from existing sources of TAC emissions on sensitive receptors on the project site are not subject to CEQA; however, impacts were analyzed for informational purposes only. Table 3.1-20 lists the cumulative

impacts of the sources of TAC emissions located within 1,000 feet of the project site on the 2018 Project’s future residents using BAAQMD’s screening tools for informational purposes only.

Table 3.1-20: Cumulative Impacts of TAC Sources on the 2018 Project’s Future Residents

Source	Source Type	Distance from the Project (feet) ⁽¹⁾	Cancer Risk ⁽²⁾ (per million)	Chronic Non-Cancer HI	PM _{2.5} Concentration (µg/m ³)
SR-4	Vehicle Traffic	150	48.7	0.034	0.31
West Leland Road	Vehicle Traffic	800	0.9	NA	0.18
Maximum Source-Specific Health Risk			48.7	0.034	0.31
Cumulative Health Risks from Nearby TAC Sources			49.6	0.034	0.48
<p>Note:</p> <p>⁽¹⁾ The cancer risks screening analysis for stationary sources, roadways and highways sources updated in 2011 use the 2010 BAAQMD Health Risks Guidance. The cancer risks were corrected by a factor of 1.12 to incorporate the latest 2016 cancer risk guidance published by BAAQMD that includes the latest assumptions on estimation of cancer risks for a 30-year exposure duration. http://www.baaqmd.gov/~media/files/planning-and-research/rules-and-regs/workshops/2016/reg-2-5/hra-guidelines_clean_jan_2016-pdf.pdf?la=en</p> <p>⁽²⁾ The maximum cumulative health impacts to the 2018 Project receptors occurs at residences located within 250 feet from the closest lane of SR-4 eastbound</p> <p>Source: see Appendix C</p>					

As noted from Table 3.1-19, the cancer risks attributable from SR-4 on the future residents of the 2018 Project would result in a cumulative health risk of 49.6 in a million. As discussed earlier, such an analysis is not required under CEQA and is presented for informational purposes only. Therefore, the analysis does not include significance findings or mitigation measures.

Overall Conclusion

Fugitive dust construction impacts of the 2018 Project would be similar to the analysis presented in the 2004 Final EIR. MM AIR-1, similar to 2004 Final EIR Mitigation Measure 15-1, would be required to reduce fugitive dust emissions and ensure impacts remain less than significant. The 2018 Project’s construction health risks would be potentially significant, but mitigation measures would reduce cancer risks to below the BAAQMD significance thresholds. Therefore, with the implementation of MM AIR-2 (Tier III engines), construction TAC emissions would result in a less than significant impact. Therefore, with the implementation of mitigation as refined in this section, the 2018 Project would not result in new significant environmental impacts or create more severe significant environmental impacts than those analyzed in the 2004 Final EIR.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-1 Implement BAAQMD Best Management Practices During Construction

The following text is a refinement of MM 15-1 from the 2004 Final EIR. The text is updated to reflect current BAAQMD best practices.

The following Best Management Practices (BMPs), as recommended by BAAQMD, shall be included in the project design and implemented during construction:

- All active construction areas shall be watered at least three times per day.
- All exposed non-paved surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and access roads) shall be watered at least three times per day and/or non-toxic soil stabilizers shall be applied to exposed non-paved surfaces.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered and/or shall maintain at least 2 feet of freeboard.
- 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.
- 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 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage regarding idling restrictions 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.
- The prime construction contractor shall post a publicly visible sign with the telephone number and person to contact regarding dust complaints. The City of Napa and the construction contractor shall take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations

MM AIR-2 Use Construction Equipment That Meets Tier 3 Off-road Emission Standards

During construction activities, all off-road equipment with engines greater than 50 horsepower shall meet either EPA or ARB Tier 3 Final off-road emission standards. The construction contractor shall maintain records concerning its efforts to comply with this requirement, including equipment lists. Off-road equipment descriptions and information may include but are not limited to equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, and engine serial number.

Level of Significance After Mitigation

Less than significant after mitigation.

3.2 - Biological Resources

3.2.1 - Introduction

This section describes the existing biological setting and the potential environmental effects from implementation of the 2018 Project on the project site and its surrounding area, as compared to those impacts evaluated in the 2004 EIR, and to determine whether additional analysis is necessary to ensure the 2004 Final EIR is adequate for purposes of evaluating the 2018 Project. Descriptions and analysis in this section are based, in part, on a field survey performed by FirstCarbon Solutions (FCS) Biologist, Joaquin Pacheco, on September 26, 2018, and a biological memorandum prepared by Ross A. Dobberteen of LSA, Inc. on June 27, 2018. The memorandum is provided in its entirety in Appendix D.

As explained more fully in this biological resources section, the 2004 Final EIR concluded that implementation of the original Alves Ranch Project would result in significant impacts related to certain species and habitats. The 2004 Final EIR included mitigation that requires the completion of biological surveys to ensure the project's consistency with federal, State, and local policies and regulations. With mitigation, the 2004 Final EIR concluded that all potentially significant impacts to biological resources would be mitigated to a level of less than significant.

The 2004 EIR covered a much larger project area, including substantial acreage south of West Leland Road, which has now been developed. Many of the mitigation measures from the 2004 EIR related to the acreage south of West Leland Road.

This biological resources section includes updated environmental setting information to characterize the existing environment, and includes additional analysis and refinements to mitigation measures, where needed, to ensure that the analysis provided by the 2004 Final EIR, as revised herein, is adequate to evaluate the project as currently proposed.

3.2.2 - Environmental Setting

The project site is comprised of approximately 57.81 acres, the majority of which is highly disturbed and no longer recognizable as a native or naturalized vegetation association. The ruderal (weedy) grassland area is level due to previous grading activities in 2004 and 2005 that occurred in connection with the approval of the Vista Del Mar development. The project site has been maintained since the original grading activities, with dominant vegetation consisting of invasive and non-native species. The level portions of the site display exposed soils with several large patches of gravel throughout the project site. There is a paved maintenance road that leads down to the stormwater basin system that was previously constructed. Additionally, constructed drainage ditches in the area lead to drop inlets that were dry at the time of the most recent survey (conducted in September 2018) and surrounded by invasive vegetation. The area containing the existing regional stormwater quality basin is dominated by a mix of facultative wetland species and invasive plant species.

The site is located within the boundaries of the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP). The HCP was adopted in October 2007. Its

purpose is to allow for a streamlined development approval process, while enforcing environmental protection standards and providing for the acquisition and preservation of biological habitat.¹ In order to be so permitted, each jurisdiction (including the City) has passed an implementing ordinance approved by the Conservancy, which governs the application of the HCP to development projects within that jurisdiction's authority.

Accordingly, the City and project applicants are governed by the HCP under the auspices of the City's implementing ordinance, codified in Chapter 15.108 of the City's Municipal Code (Implementing Ordinance). The City's Implementing Ordinance requires the payment of fees (development fees, wetland mitigation fees, and administration fees), or the dedication or restoration of habitat area, for new development within the area covered by the HCP. However, it also expressly exempts projects with rights vested before the ordinance was passed on November 5, 2007. Accordingly, because the applicant for the 2018 Project continues to have rights vested under an approved development agreement, it is exempt from the HCP under the express terms of the City's Implementing Ordinance. As mentioned above, the dominant vegetation on the majority of the project site are invasive and non-native species. Species observed included: yellow star thistle (*Centaurea solstitialis*), wild oat (*Avena fatua*), common dandelion (*Taraxacum officinale*), wild mustard (*Brassica nigra*), and sticky weed (*Galium aparine*). Coyote brush (*Baccharis pilularis*) is dominant throughout the entire project site, specifically on the sloped hills leading down to the existing regional stormwater quality detention basin. The water quality detention basin contains abundant cattail species (*Typha* spp.), common reed (*Phragmites australis*), and nutsedge (*Cyperus* spp.).

Ruderal and Developed Land

The majority of the project site consists of previously disturbed land with various weedy species, which have since proliferated throughout the project site. Vegetation characteristic of ruderal vegetation includes non-native grasses and other weedy species such as London Bermuda grass (*Cynodon dactylon*), Russian thistle (*Salsola tragus*), slender wild oat (*Avena barbata*), and milkvetch (*Astragalus* spp.).

Stormwater Basin

The existing stormwater basin system displays both facultative wetland species and invasive species. It consists of two large trash grates and two large drainages. Some common species found in similar habitat settings include hyssop loosestrife (*Lythrum hyssopifolia*), cocklebur (*Xanthium* spp.), and Italian ryegrass (*Lolium multiflorum*), that typically occur in frequently disturbed sites. Although the basin is regularly maintained as part of its purpose to provide regional stormwater control, as of September 2018 (when the last field survey occurred), there was standing water present in this area.

¹ The HCP is administered by the East Contra Costa County Habitat Conservancy (Conservancy), a joint powers authority established by the jurisdictions that participate in the HCP. Each of these jurisdictions (including the City) is a "Permittee" under the HCP and applicable state and federal environmental protection laws, and as such, each Permittee (including the City) is authorized to provide take coverage for development projects within its land use jurisdiction under the terms of the HCP.

Wildlife

The previously disturbed nature of the site, in addition to the high level of traffic and development surrounding the project site, allow for only a limited number of wildlife species to occur. The majority of wildlife species that can tolerate disturbed and fragmented habitat conditions are generally invasive species and non-native species. During the September 29, 2018, field survey, an FCS biologist detected the following species by sight or vocalizations: American crow (*Corvus brachyrhynchos*), Eurasian collared dove (*Streptopelia decaocto*), American robin (*Turdus migratorius*), black-tailed jackrabbit (*Lepus californicus*), and northern harrier (*Circus cyaneus*).

Special-status Species

Special-status species are plant and animal species that have been afforded special recognition by federal, State, or local resource agencies or organizations. Special-status species are of relatively limited distribution and may require specialized habitat conditions. Special-status species are defined as meeting one or more of the following criteria:

- Listed or proposed for listing under the California Endangered Species Act (CESA) or the Federal Endangered Species Act (FESA);
- Protected under other regulations (e.g. Migratory Bird Treaty Act [MBTA]);
- California Department of Fish and Wildlife (CDFW) Species of Special Concern;
- Plant species ranked by the California Native Plant Society (CNPS); or
- Receive consideration during environmental review under California Environmental Quality Act (CEQA).

Special-status Plants

Special-status plant communities are considered sensitive biological resources when federal, state, or local laws regulate their development, limited distributions, and habitat requirements of special-status plant or wildlife species that occur within them.

The special-status plant species table (Appendix D, Table 1) identifies 12 special-status plant species that have the potential to occur within the Honker Bay 7.5-minute quadrangle. The 7.5-minute quadrangle is a common geographical scope to which view the variety of habitats, plant, and wildlife species that may occur within, or nearby, a given project site. Table 1 in Appendix D is based partly on LSA's Biological Memorandum, FCS's field visit, as well as a review of other relevant materials and data documenting the species that have been recorded to occur within the Honker Bay, California quadrangle, as recorded by the California Natural Diversity Database (CNDDDB) and the California Native Plant Society's Electronic Inventory (CNPSEI) (CDFW 2018; California Rare Plant Rank [CRPR] 2018). The table also includes each species' status, required habitat, and potential to occur within the project site.

Of the 12 special-status plant species that have been recorded to occur within the Honker Bay quadrangle, none are expected to occur on-site due to the high level of disturbance on-site as well as the ongoing periodic maintenance activities that occur in connection with the existing regional

stormwater basin. The 2004 Final EIR also concluded that no special-status plant species are likely to occur on the site. For these reasons and as detailed more fully in Appendix D, it is highly unlikely for these species to occur within the project boundaries.

Special-status Wildlife

The Special-Status Wildlife Species Table (Appendix D, Table 2) identifies 20 special-status wildlife species that have the potential to occur within the Honker Bay 7.5-minute quadrangle. The 7.5-minute quadrangle is a common geographical scope to which view the variety of habitats, plant, and wildlife species that may occur within, or nearby, a given project site. Table 2 in Appendix D is based partly LSA's Memorandum, FCS's field visit, as well as review of other relevant materials and data documenting the species that have been recorded to occur within the Honker Bay, California quadrangle, as recorded by the CNDDDB and CNPSEI (CDFW 2018; CRPR 2018). The table also includes each species' status, required habitat, and potential to occur within the project site.

The 2004 Final EIR concluded that the project could result in potential impacts to the following species: California red-legged frog, California tiger salamander, pallid bat, Yuma myotis bat, kit fox, burrowing owl, and other nesting birds and raptors. The majority of the potential impacts identified in the 2004 Final EIR related to habitats and acreage in the southern portion of the Vista del Mar site, located to the south of West Leland Road. The 2004 Final EIR noted that the project proposed to set aside 87 acres in the southern portion of the site to preserve habitats that support the identified species. The 2004 project also purchased credits from off-site mitigation banks to further support these species and their habitats.

Following is additional information regarding the relevant special-status species and a discussion of the potential for each species to be on-site. As noted below, the following two species have potential to be found on the 2018 Project site: burrowing owl and Swainson's hawk.

Amphibians

California red-legged frog

The California red-legged frog is a California Species of Special Concern. It prefers to inhabit the lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. The species requires 11–20 weeks of permanent water for larval development. While the existing regional stormwater quality detention basin may be a permanent source of water, the lack of dense coverage and high disturbance around the feature makes it highly unlikely that the species occurs within the project site. Furthermore, there are no other permanent sources of deep water on-site that could serve as likely habitat for this species. It is unlikely for this species to occur on the 2018 Project site.

Birds

Burrowing owl

The burrowing owl is a California Species of Special Concern. Marginal habitat (dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation) are currently present within the project site. The species was not found during LSA's or FCS's field surveys, and additionally, no indicators of habitat or burrowing owl were found on-site during the field survey.

However, for purposes of a conservative analysis, it is recognized that because of the presence of marginal habitat, there is a low potential for this species to occur on the 2018 Project site.

California black rail

The California black rail is protected under the MBTA as well as listed as a threatened species within the State of California. It inhabits freshwater marshes, wet meadows, and the borders of saltwater marshes around larger bays, such as areas within the Suisun Marsh and Honker Bay. Although the project site is in proximity of the Suisun Marsh and Honker Bay (within 5 miles), it is unlikely this species will occur on the 2018 Project site due to preferential foraging and nesting habitat off-site and the high level of disturbance that has previously occurred.

California Ridgeway's Rail

California ridgeway's rail is a federally and State endangered species as well as protected under the MBTA. It resides in saltwater and brackish marshes in the San Francisco Bay and associated areas. Although the project site is in proximity of saltwater marshes (within 5 miles), it is unlikely for the species to occur on the 2018 Project site due to preferential foraging and nesting habitat off-site, the high level of disturbance that has previously occurred, as well as the absence of saltwater marshes.

Saltmarsh Common Yellowthroat

The saltmarsh common yellowthroat is a California Species of Special Concern that resides in fresh and saltwater marshes. It requires thick grass coverage for foraging, commonly residing in tall grasses and tule patches for nesting. Although the project site is in proximity of salt and freshwater marshes (within 5 miles), it is unlikely for the species to occur on the 2018 Project site due to preferential foraging and nesting habitat off-site and the high level of disturbance that has previously occurred. Additionally, the only available nesting habitat on-site is routinely maintained by discing, which would preclude nesting.

Short-Eared Owl

The short-eared owl is a California Species of Special Concern that is found in swamp areas, fresh and saltwater marshes, and lowland meadows. The species uses tule patches and tall grass for nesting. Although the project site is in proximity of suitable habitat (within 5 miles), it is unlikely for the species to occur on the 2018 Project site due to preferential foraging and nesting habitat off-site and the high level of disturbance that has previously occurred. Additionally, the only available nesting habitat on-site is routinely maintained and therefore, would preclude nesting.

Suisun Song Sparrow

The Suisun song sparrow is a California Species of Special Concern that resides in brackish-water marshes surrounding the Suisun Bay. It inhabits areas with cattails, tules, and other sedges in the Suisun Bay and surrounding areas. Although the project site is in proximity of the Suisun Bay (within 5 miles), it is unlikely for the species to occur on-site due to preferential habitat off-site and the high level of disturbance that has previously occurred on the project site. Similarly, the only potentially available nesting habitat on-site is routinely maintained and therefore, would preclude nesting.

Swainson's Hawk

Swainson's hawk is federally protected under the MBTA, and is additionally listed as a California threatened species. The species breeds in grasslands with scattered trees or on ranch lands with groves or lines of trees. It requires adjacent suitable foraging areas, such as grasslands or grain fields supporting rodent populations. This species has the potential to occur on the 2018 Project site due to the suitable foraging habitat present in the form of open, dry grassland with little to no ground cover, and the lack of trees coverage.

Tricolored Blackbird

The tricolored blackbird is protected under the MBTA, and is a California Species of Special Concern. The species is a highly colonial species, being most numerous in the Central Valley and its surrounding vicinity. The species requires open water, protected nesting substrate, and foraging area with insect prey in the vicinity of a colony. It is unlikely this species will occur within the 2018 Project site due to the lack of extensive marsh that is required for supporting a colony.

Yellow Rail

The yellow rail is a California Species of Special Concern that inhabits shallow marshes and wet meadows. It can reside in both freshwater and brackish marshes as well as dense grass and rice fields. Although the project site is in proximity of the freshwater and brackish marshes, it is unlikely this species would occur on the 2018 Project site due to preferential habitat off-site and the high level of disturbance that has previously occurred. The only potentially available nesting habitat on-site is routinely maintained by discing, which would preclude nesting.

Jurisdictional Waters

The project site does not contain potential jurisdictional waters subject to regulation by the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and the CDFW. The existing stormwater basin is a closed system that does not include any nexus to traditional navigable waters. The existing stormwater basin contains annual standing water but is actively maintained to support its purpose for regional stormwater control.

3.2.3 - Regulatory Framework

Federal

Federal Endangered Species Act

The U.S. Congress passed the FESA in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA § 3(3)(19)). "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 Code of Federal Regulations [CFR] §

17.3). “Harass” is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR § 17.3). Actions that result in take can result in civil or criminal penalties.

FESA and Clean Water Act (CWA) Section 404 guidelines prohibit the issuance of wetland permits for projects that jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species. The USACE must consult with the United States Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) when threatened or endangered species under their jurisdiction may be affected by a proposed project. FESA would be initiated if development of a proposed project would result in take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could result in take of an endangered species or adversely modify critical habitat of such a species

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of State and federal laws. The MBTA prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

Clean Water Act

The USACE regulates discharge of dredge or fill material into waters of the United States under Section 404 of the CWA. “Discharges of fill material” is defined as the addition of fill material into waters of the United States, including, but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines (33 CFR § 328.2(f)). In addition, Section 401 of the CWA (33 United States Code [USC] 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Waters of the United States include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of waters is present. Methods for delineating wetlands and non-tidal waters are described below.

- Wetlands are defined as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR § 328.3(b)). Presently, to be a wetland, a site must exhibit three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the “normal circumstances” for the site.

- The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) (33 CFR § 328.4(c)(1)). The OHWM is defined by the USACE as, “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.” (33 CFR § 328.3(e))

State

California Endangered Species Act

The State of California enacted the CESA in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires State agencies to consult with the CDFW when preparing CEQA documents. The purpose is to ensure that the State lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code [FGC] § 2080). CESA directs agencies to consult with the CDFW on projects or actions that could affect listed species, directs the CDFW to determine whether jeopardy would occur, and allows the CDFW to identify “reasonable and prudent alternatives” to the project consistent with conserving the species. CESA allows the CDFW to authorize exceptions to the State’s prohibition against take of a listed species if the “take” of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (FGC § 2081).

California Department of Fish and Game Code

Fully-protected fish species are protected under Fish and Game Code, Section 5515; fully-protected amphibian and reptile species are protected under Fish and Game Code, Section 5050; fully-protected bird species are protected under Fish and Game Code, Section 3511; and fully-protected mammal species are protected under Fish and Game Code, Section 4700. The Fish and Game Code defines take as, “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Except for take related to scientific research, all take of fully-protected species is prohibited. Fish and Game Code Section 3503, prohibits the killing of birds or the destruction of bird nests. Fish and Game Code Section 3503.5, prohibits the killing of raptor species and the destruction of raptor nests. Fish and Game Code Sections 2062 and 2067 define endangered and threatened species.

California Department of Fish and Wildlife Species of Concern

In addition to formal listing under FESA and CESA, species receive additional consideration by the CDFW and local lead agencies during the CEQA process. Species that may be considered for review are included on a list of “Species of Special Concern,” developed by the CDFW. It tracks species in California whose numbers, reproductive success, or habitat may be threatened. In addition to Species of Special Concern, the CDFW identifies animals that are tracked by the CNDDDB, but warrant no federal interest and no legal protection. These species are identified as California Special Animals.

Porter-Cologne Water Quality Control Act

The CDFW is a trustee agency that has jurisdiction under Section 1600 et seq. of the California Fish and Game Code. Under Fish and Game Code Sections 1602 and 1603, a private party must notify

the CDFW if a proposed project will “substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds . . . except when the department has been notified pursuant to Section 1601.” Additionally, the CDFW may assert jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over 4 inches in diameter at breast height. If an existing fish or wildlife resource may be substantially adversely affected by the activity, the CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with the CDFW identifying the approved activities and associated mitigation measures.

Section 13260(a) of the Porter-Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State.

Historically, California relied on its authority under Section 401 of the CWA to regulate discharges of dredged or fill material to California waters. That section requires an applicant to obtain “water quality certification” from the State Water Resources Control Board (State Water Board) through its RWQCB to ensure compliance with State water quality standards before certain federal licenses or permits may be issued. The permits subject to Section 401 include permits for the discharge of dredged or fill materials (CWA Section 404 permits) issued by the USACE. Waste discharge requirements under the Porter-Cologne Water Quality Control Act were typically waived for projects that required certification. With the recent changes that limited the jurisdiction of wetlands under the CWA, the State Water Board has needed to rely on the report of waste discharge process.

California Native Plant Society

The CNPS maintains a rank of plant species native to California that has low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS ranks:

- **Rank 1A:** Plants presumed Extinct in California
- **Rank 1B:** Plants Rare, Threatened, or Endangered in California and elsewhere
- **Rank 2:** Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere
- **Rank 3:** Plants about which we need more information—A Review List
- **Rank 4:** Plants of limited distribution—A Watch List

All plants appearing on CNPS List 1A, 1B, or 2 are considered to meet *CEQA Guidelines* Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA.

Local

Habitat Conservation Plan

The project site is located within the East Contra Costa County Habitat Conservancy, which is a joint exercise of powers authority formed by the cities of Brentwood, Clayton, Oakley, Pittsburg, and Contra Costa County to implement the East Contra Costa County HCP/NCCP. As explained in Section 3.2.2, Environmental Setting, because the applicant for the 2018 Project continues to have rights vested under the development agreement, it is exempt from the HCP under the express terms of the City's Implementing Ordinance.

The HCP/NCCP includes the following policies relevant to biological resources: Chapter 5-1 of the HCP/NCCP: Conservation Strategy

- **Goal 1:** Preserve wetlands and ponds in the inventory area
 - **Objective 1.1.** Acquire perennial wetlands at a ratio of 1:1 of wetted acres (estimated to be 75 wetted acres with the maximum urban development area) and protect as part of the Preserve System
 - **Objective 1.4.** Acquire ponds at a ratio of 2:1 of wetted acres (estimated to be 16 wetted acres with the maximum urban development area) and protect as part of the Preserve System
 - **Objective 1.8.** Preserve and maintain contiguous wetland-upland complexes
- **Goal 2:** Maintain and enhance hydrogeomorphic and ecological function of wetlands and ponds to promote covered species, native biological diversity, and habitat heterogeneity
 - **Objective 2.1.** Maintain or increase native emergent vegetation where appropriate
 - **Objective 2.5.** Eliminate or reduce non-native animals
 - **Objective 2.6.** Eliminate or reduce exotic plants
 - **Objective 2.7.** Maintain or enhance upland habitat in close proximity to wetlands and ponds to support the life-history requirements of wetland-dependent covered species
- **Goal 11:** Enhance grassland to promote native biological diversity and habitat heterogeneity
 - **Objective 11.1.** Increase the relative cover of native grasses and forbs in native grassland vegetation alliances and other grassland types
 - **Objective 11.3.** Reduce the biomass, cover, and extent of exotic plants (i.e., non-native invasive plants) in the Preserve System
- **Goal 24:** Preserve chaparral/scrub in the inventory area
 - **Objective 24.1.** Protect 550 acres of chaparral/scrub that support a diversity of native plant alliances including chaparral, California sage scrub, and black sage scrub

City of Pittsburg

General Plan

The City of Pittsburg General Plan sets forth the following goals and objectives relevant to biological resources.

- **Policy 8-P-8:** Preserve areas of riparian and other wildlife habitat, oak woodland, and other significant biotic resources within parks. Design park improvements to be compatible with the preservation of such resource areas.

- **Goal 9-G-1:** Protect conservation areas, particularly habitats that support special-status species, including species that are State or federally listed as endangered, threatened, or rare.
- **Goal 9-G-2:** Guide development in such a way that preserves significant ecological resources.
- **Goal 9-G-3:** Support the reclamation of wetlands and marshlands along local industrial waterfronts.
- **Policy 9-P-1:** Ensure that development does not substantially affect special-status species, as required by State and federal agencies. Conduct assessments of biological resources as required by CEQA prior to approval of development within habitat areas of identified special-status species, as depicted in Figure 9-1.

3.2.4 - Methodology

Descriptions and analysis in this section are based, in part, on a field survey performed by FCS Biologist, Joaquin Pacheco, on September 26, 2018, in addition to a biological memorandum prepared by Ross A. Dobberteen of LSA, Inc. on June 27, 2018. The memorandum is provided in its entirety in Appendix D.

The analysis focuses on changed circumstances and new information provided by the 2018 field surveys, in order to confirm whether the project as currently proposed would result in any new or more severe impacts than were evaluated and disclosed in the 2004 Final EIR. This section includes additional analysis and refinements to mitigation measures, where needed, to ensure that the analysis provided by the 2004 Final EIR, as revised herein, is adequate to evaluate the project as currently proposed.

Literature Review

As noted above, LSA prepared a Biological Memorandum dated June 27, 2018. FCS began with a thorough peer review of that document in concert with a review of relevant literature.

Consistent with industry standards and protocols, FCS biologists examined existing environmental documentation for the project site and immediate vicinity. This documentation included the Memorandum noted above, literature pertaining to habitat requirements of special-status species potentially occurring near the site, and federal register listings, protocols, and species data provided by the USFWS and CDFW.

FCS biologists reviewed the United States Geological Survey (USGS) 7.5-minute Honker Bay, California quadrangle map and aerial photographs as a preliminary analysis of the existing conditions within the project site and immediate vicinity (consisting of a 1-mile radius). Information obtained from the review of the topographic maps included elevation range, general watershed information, and potential drainage feature locations (USGS 1986). Aerial photographs provide a perspective of the most current site conditions relative to on-site and off-site land use, plant community locations, and potential locations of wildlife movement corridors. FCS also reviewed United States Department of Agriculture soil surveys to establish if soil conditions on-site are suitable for any special-status plant species.

FCS biologists compiled a list of threatened, endangered, and otherwise special-status species previously recorded within the study area. The list was based on the Memorandum, a search of the CDFW's CNDDDB, a special-status species and plant community account database, the CNPS's Electronic Inventory of Rare and Endangered Vascular Plants of California database, and a USFWS Information Planning and Conservation Report Search, for the Honker Bay, California USGS 7.5-minute quadrangle maps. The database search results can be found in Appendix D.

Field Survey

FCS Biologist, Joaquin Pacheco, surveyed the project site on September 26, 2018. The purpose of the survey was to assess general site conditions, identify vegetation and wildlife habitats and identify any potentially suitable habitat areas for various special-status plant and wildlife species consistent with industry standards and protocols. FCS compared the existing environment and resulting analysis to the information provided in the 2004 Final EIR, and identified any new analysis or mitigation measures needed to ensure that the 2004 Final EIR, as modified herein, adequately evaluates the project as currently proposed and its potential effects to biological resources.

Any relevant special-status species were identified during the literature review and special attention was paid to the potential for sensitive habitats and areas potentially supporting special-status floral and faunal species. Common plant species observed during the survey were identified by visual characteristics and morphology in the field and recorded in a field notebook. Uncommon and less familiar plants were identified later with the use of taxonomical guides, such as Clarke et al. (2007), Hitchcock (1971), McAuley (1996), and Munz (1974). Taxonomic nomenclature used in this study follows Baldwin et al. (2012). Common plant names, when not available from Baldwin et al. (2012), were taken from other regionally specific references.

Wildlife species detected during the field-level survey by sight, calls, tracks, scat, or other signs were recorded in a field notebook. Notations were made regarding any suitable habitat for those special-status species determined to potentially occur within the project site. Appropriate field guides were used to assist with species identification during surveys.

3.2.5 - Thresholds of Significance

As further explained in Section 1 of this Draft Supplemental EIR, CEQA includes a presumption against requiring any further environmental review once an EIR has been prepared and certified for a project, and does not generally require an analysis of revisions made to laws or regulations after certification of the EIR. Furthermore, this Draft Supplemental EIR meets the content requirements for purposes of CEQA in effect when it was set out for public review. Nevertheless, for purposes of a conservative analysis, the City of Pittsburg recognizes that the California Code of Regulations² were recently

² Pursuant to CEQA Guidelines Section 15007(a), the Guidelines have recently been amended. Subpart (c) of Section 15007 provides: "If a document meets the content requirements in effect when the document is set out for public review, the document shall not need to be revised to conform to any new content requirements in guideline amendments taking effect before the document is finally approved." Pursuant to subpart (b) of Section 15007, "Amendments to the guidelines apply prospectively only. New requirements in amendments will apply to steps in the CEQA process not yet undertaken by the date when agencies must comply with the amendments." Pursuant to subpart (d) of Section 15007, public agencies must comply with guideline amendments beginning with the earlier of the following two dates: the effective date of the agency's procedures to conform to the new guideline amendments, or 120 days after the amended guidelines become effective.

amended. Therefore, in the City's discretion as the lead agency, in an abundance of caution and to ensure full disclosure, this Draft Supplemental EIR includes consideration of impacts utilizing the 2019 CEQA Guidelines Appendix G. As such, the following questions are analyzed and evaluated to determine whether impacts related to noise are significant in the context of this Draft Supplemental EIR.

According to Appendix G, "Environmental Checklist," of the *CEQA Guidelines*, biological resources impacts resulting from the implementation of the 2018 Project would be considered significant if the 2018 Project would:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or United States Fish and Wildlife Service?
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or United States Fish and Wildlife Service?
- c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? This issue was evaluated in the initial study, which concluded the project would have no impact. Therefore, this issue is not studied further.
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? This issue was evaluated in the initial study, which concluded the project would have no impact. Therefore, this issue is not studied further.

3.2.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the 2018 Project as compared to the impact analysis and conclusions evaluated and disclosed in the 2004 EIR, and provides feasible mitigation measures where appropriate.

Special-status Species

Impact BIO-1: The 2018 Project may have a substantial adverse impact on special-status plant and wildlife species.

Impact Analysis

The 2004 Final EIR identified several species of concern on the Vista Del Mar development area, and included mitigation measures which require that biological surveys be conducted on-site prior to construction, and any mitigation imposed by the resource agencies be implemented.

Implementation of the mitigation measures was found to reduce all significant impacts to special-status species to a less than significant level.

An impact to special-status plant and wildlife species would be considered significant if implementation of the 2018 Project would result in a substantial, adverse change in any of the physical conditions (such as habitat) within the area affected by the 2018 Project and would therefore adversely affect a special-status species. Each potential special-status species that has the potential to be impacted from project implementation is discussed in detail below.

Special-status Plant Species

The 2004 Final EIR concluded that the project would have no impact to any special-status plant species. Based on the field survey conducted by FCS biologists, FCS also concludes that the 2018 Project would have no impact on special-status plant species. None of the 12 special-status plant species are expected to be present on the project site. Based, in part, on FCS's and LSA's field surveys and the lack of suitable habitat, coupled with the level of disturbance experienced at the site, no special-status plants are expected to occur on the site and no mitigation measures are recommended. Supporting information for this impact analysis and related conclusions is included in Appendix D.

Special-status Wildlife Species

The 2004 Final EIR concluded that the project could result in potential impacts to the following species: California red-legged frog, California tiger salamander, pallid bat, Yuma myotis bat, kit fox, burrowing owl, and other nesting birds and raptors. The majority of the impacts related to habitats and acreage in the southern portion of the Vista del Mar site, located on the south side of West Leland Road. The 2004 Final EIR noted that the project proposed to set aside 87 acres in the southern portion of the site to preserve habitats that support the identified species. The 2004 project also purchased credits from off-site mitigation banks to further support these species and their habitats.

As discussed further below, the 2018 Project is located north of West Leland Road and does not contain the sensitive habitats that were identified in the 2004 Final EIR (the sensitive habitats were identified south of West Leland Road, in the southern portions of the Vista Del Mar project). As a result, there is a low potential for burrowing owl, Swainson's hawk, and other nesting birds to occur on-site, but none of the other species or habitats discussed in the 2004 Final EIR are present on the 2018 Project site. This analysis incorporates the relevant mitigation measures from the 2004 Final

EIR, with refinements where appropriate to reflect current industry standards and best practices. Supporting information for this impact analysis and related conclusions is included in Appendix D.

Burrowing Owl

The burrowing owl is a California Species of Special Concern. This species typically utilizes ground squirrel burrows and other animals (e.g. badgers, prairie dog, and kangaroo rat). The species was not found during LSA's or FCS's field surveys, and additionally, no indicators of habitat or burrowing owl were found on-site during the field survey. However, suitable roosting and breeding habitat (open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation, grazing and agricultural lands) is present on the project site. This species would represent a seasonal constraint to development since burrowing owls, if present, could be harmed during construction unless accepted protocols were in place. If the site were to support nesting owls and nesting owls were found to be present, then areas supporting nesting owls would have to be avoided until the completion of the nesting season (August 31). As required by the 2004 Final EIR, a preconstruction burrowing owl survey is required no more than 30 days prior to construction to confirm the presence/absence of owls. As described further below, Mitigation Measure BIO-1a requires pre-construction surveys for burrowing owl. If the species is present, the mitigation measure requires that avoidance and protection measures be implemented. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

Swainson's Hawk

The Swainson's hawk is federally protected under the MBTA as well as listed as a California threatened species. The species breeds in grasslands with scattered trees or ranch lands with groves or lines of trees. The species was not found during LSA's or FCS's field surveys. However, the open, dry habitat present on-site has the potential to be suitable foraging habitat for this species as grasslands or grain fields commonly support rodent populations. As required by the 2004 Final EIR, a pre-construction survey is required to confirm presence/absence of Swainson's hawk. As described further below, Mitigation Measure BIO-1b requires pre-construction surveys prior to any construction activities. If the species is present, the mitigation measure requires that avoidance and protection measures be implemented. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

Migratory and Nesting Birds

While the 2004 Final EIR identified potential impacts to nesting raptors, it did not include mitigation requiring pre-construction surveys for other nesting migratory bird species, which are protected under the MBTA.

Due to the potential for ground-nesting birds and other species protected under the MBTA that may occur on the 2018 Project site, it is recommended Mitigation Measure BIO-1c be implemented. Implementation of this mitigation measure would reduce potential impacts to migratory and nesting birds and raptors protected under the MBTA to less than significant. In addition to the pre-construction survey, the measure requires avoidance of any active nests to prevent take of any individuals.

Level of Significance Before Mitigation

Potentially significant impacts

Mitigation Measures**MM BIO-1a Burrowing Owl**

No more than 30 days prior to the first ground-disturbing activities, the project applicant shall retain a qualified biologist to conduct a preconstruction survey on the project site. The survey shall establish the presence or absence of western burrowing owl and/or burrows, and evaluate any use by owls in accordance with applicable CDFW survey guidelines.

On the portion of the project site where the ground disturbing activity is proposed, the biologist shall survey the proposed disturbance footprint and a 500-foot radius from the perimeter of the proposed footprint to identify whether any burrows and/or owls are present. Adjacent areas on the project site that are not being proposed for ground disturbance need not be surveyed. The survey shall take place near the sunrise or sunset in accordance with applicable CDFW guidelines. All burrows or burrowing owls (if any) shall be identified and mapped. During the breeding season (February 1–August 31), surveys shall document whether burrowing owls (if any) are nesting on or directly adjacent to disturbance areas. During the non-breeding season (September 1–January 31), surveys shall document whether burrowing owls (if any) are using habitat on or directly adjacent to any disturbance area. Survey results shall be valid only for the season during which the survey is conducted.

If burrowing owls are not discovered during the above-described pre-construction surveys, or if burrows are identified but are inactive, further mitigation is not required.

If burrowing owls are observed during the pre-construction surveys, the project applicant shall perform the following measures to limit the impact on the burrowing owls:

- Avoidance shall include establishment of a 160-foot non-disturbance buffer zone. Construction may occur during the breeding season if a qualified biologist monitors the nest and determines that the birds have not begun egg-laying and incubation, or that the juveniles from the occupied burrows have fledged. During the non-breeding season (September 1–January 31), the project proponent shall avoid the owls and the burrows they are using, if possible. Avoidance shall include the establishment of a 160-foot non-disturbance buffer zone.
- If it is not possible to avoid occupied burrows, passive relocation shall be implemented. Owls shall be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors in burrow entrances. These doors shall be in place for 48 hours prior to excavation. The

project area shall be monitored daily for 1 week to confirm that the owl has abandoned the burrow. Whenever possible, burrows should be excavated using hand tools and refilled to prevent re-occupation. Plastic tubing or a similar structure shall be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.

MM BIO-1b Swainson's Hawk

Prior to any ground disturbance that occurs during the nesting season for Swainson's hawk (March 15 to September 15), a qualified biologist shall conduct a preconstruction survey no more than 30 days prior to construction to establish whether there are any Swainson's hawk nests within 1,000 feet of the project site, and if so, whether they are occupied. If potentially occupied nests within 1,000 feet are located adjacent to but not on the project site, then their occupancy shall be determined by observation from public roads or other publicly accessible observation areas of Swainson's hawk activity (e.g., foraging) near the project site. If Swainson's Hawks are not discovered during the above-described pre-construction surveys, or if a nest is identified but is inactive, further mitigation is not required.

If nests are located and determined to be occupied, minimization measures and construction monitoring are required as follows:

- In order to mitigate for the loss of Swainson's hawk foraging habitat to a less than significant level, the Project applicant shall acquire conservation easements or other instruments to preserve suitable foraging habitat for Swainson's hawk, as determined by the California Department of Fish and Game. The location of mitigation parcels as well as the conservation instruments protecting them shall be acceptable to the City and to the California Department of Fish and Game. The amount of land preserved shall be governed by a 1:1 mitigation ratio for each acre developed at the Project site. In deciding whether to approve the land proposed for preservation by the Project applicant, the City shall consider the benefits of preserving lands in proximity to other protected lands. The preservation of land shall be done prior to any site disturbance, such as clearing or grubbing, or the issuance of any permits for grading, building, or other site improvements, whichever occurs first. In addition, the City shall impose the following minimum conservation easement content standards:
 - The land to be preserved shall be deemed suitable Swainson's hawk foraging habitat by the California Department of Fish and Wildlife.
 - All owners of the mitigation land shall execute the document encumbering the land.
 - The document shall be recordable and contain an accurate legal description of the mitigation land.
 - The document shall prohibit any activity which substantially impairs or diminishes the land's capacity as suitable Swainson's hawk foraging habitat.

- If the land's suitability as foraging habitat is related to existing agricultural uses on the land, the document shall protect any existing water rights necessary to maintain such agricultural uses on the land covered by the document, and retain such water rights for ongoing use on the mitigation land.
- The applicant shall pay to the City a mitigation monitoring fee to cover the costs of administering, monitoring and enforcing the document in an amount determined by the receiving entity, not to exceed 10% of the easement price paid by the applicant, or a different amount approved by the City Council, not to exceed 15% of the easement price paid by the applicant.
- Interests in mitigation land shall be held in trust by an entity acceptable to the City and/or the City in perpetuity. The entity shall not sell, lease, or convey any interest in mitigation land which it shall acquire without the prior written approval of the City.
- The City shall be named a beneficiary under any document conveying the interest in the mitigation land to an entity acceptable to the City.
- If any qualifying entity owning an interest in mitigation land ceases to exist, the duty to hold, administer, monitor and enforce the interest shall be transferred to another entity acceptable to the City or to the City.

Before committing to the preservation of any particular land pursuant to this measure, the Project proponent shall obtain the City's approval of the land proposed for preservation. This mitigation measure may be fulfilled in combination with a mitigation measure imposed on the project requiring the preservation of agricultural land as long as the agricultural land is determined by the Department of Fish and Wildlife to be suitable Swainson's hawk habitat.

MM BIO-1c Migratory and Nesting Birds

Prior to the start of construction, the implementation of the following avoidance and minimization measures would avoid or minimize potential effects to migratory birds and habitat in and adjacent to the project site. These measures shall be required to be implemented for construction work that occurs during the nesting season (February 15 through August 31). No mitigation measures shall be required during the non-nesting season (September 1 through February 14)

- If construction or tree removal is proposed during the nesting season for migratory birds (February 15 through August 31), a qualified biologist shall conduct pre-construction surveys for ground nesting birds and migratory species, such as the northern harrier, within the construction area, including a 300-foot survey buffer, no more than 3 days prior to the start of ground disturbing activities in the construction area.
- If an active nest of any of the above-identified migratory birds is located during pre-construction surveys, then the project applicant shall adhere to notification requirements to USFWS and/or CDFW (as appropriate) regarding the status of the nest as may be required under applicable laws and regulations. Furthermore,

construction activities shall be restricted as necessary within any identified buffer area (as determined by the qualified biologist) to avoid disturbance of the nest until it is abandoned or a qualified biologist deems disturbance potential to be minimal. Restrictions may include establishment of exclusion zones (no ingress of personnel or equipment at a minimum radius of 300 feet around an active raptor nest and 50-foot radius around an active migratory bird nest) or alteration of the construction schedule.

- A qualified biologist shall: determine the size of the appropriate buffer and delineate the identified buffer using nest buffer signs, ESA fencing, pin flags, and or flagging tape. The buffer zone shall be maintained around the active nest site(s) until the young have fledged and are foraging independently, at which time no further mitigation shall be required.

Level of Significance After Mitigation

Less than significant impact.

Sensitive Natural Communities or Riparian Habitat

Impact BIO-2: **The 2018 Project would not have adverse impacts on sensitive natural communities or riparian habitat.**

Impact Analysis

The 2004 Final EIR did not identify any seasonal creek or drainages north of West Leland Road. The 2004 Final EIR found that potential impacts to approximately 1 acre of seasonal creeks and drainages south of West Leland Road (and therefore outside of the 2018 Project boundaries) would be less than significant with incorporation of mitigation measures which required completion of a wetland delineation and implementation of any mitigation imposed. Since that time, the wetland delineation was prepared and certified by the USACE, and a Wetlands Mitigation and Monitoring Plan was submitted, approved, and implemented, including the creation of mitigation ponds as required by the permit conditions.

Currently, the majority of the site is highly disturbed and graded land. Vegetation on-site is dominated by several invasive species of plants. The greater urban context of the site encourages the dominance of invasive species of plants and wildlife, as it is surrounded by a highly trafficked road way and large, residential complexes. As such, there would be no significant impacts to any sensitive natural communities or riparian habitat, and therefore no mitigation measures would be required. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Wetlands and Jurisdictional Features

Impact BIO-3: The 2018 Project would not have a substantial adverse effect on wetlands or jurisdictional features.

Impact Analysis

The 2004 Final EIR identified approximately 2.7 acre of waters of the United States, all of which were found south of West Leland Road. The 2004 Final EIR found that potential impacts to wetlands or jurisdictional features would be less than significant with incorporation of mitigation measures, which required completion of a wetland delineation and implementation of any mitigation imposed.

The project site is comprised mostly of dry, open grassland and a manmade stormwater basin and, as such, does not contain any wetlands or associated construction aspects that would require filling, removal, or degradation of wetlands. The stormwater basin in the northern portion of the site is regularly maintained and is part of a closed system that does not act as a nexus to navigable waters. The basin was constructed as part of the 2004 project to provide stormwater control for the Vista Del Mar project as well as development on the remaining lands north of West Leland Road (i.e., the 2018 Project). Therefore, the drainages, culverts, and channels that connect to the stormwater basin are not considered jurisdictional features and will not be subject to regulation by regulatory agencies.

Impacts to federally protected wetlands would be considered significant if the proposed project operations resulted in a substantial, adverse change in any of the physical conditions (i.e. fill) of wetlands or jurisdictional features. As such, no impact related to effect on wetlands would occur from project construction.

Level of Significance Before Mitigation

No impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No impact.

Fish and Wildlife Movement Corridors

Impact BIO-4: The 2018 Project would not have substantial adverse impacts on fish or wildlife movement.

Impact Analysis

The 2004 Final EIR found that due to proximity to surrounding urban development and lack of high quality habitat on-site, a less than significant impact to wildlife movement was anticipated.

Additionally, due to the limited amount of tree and shrub cover, the creeks and drainages (all of which are located south of West Leland Road) do not allow for concealed wildlife movement.

The project site was evaluated for evidence of a wildlife movement corridor during the 2018 reconnaissance-level surveys. These impact conclusions are based, in part, on the information compiled during the literature review, including aerial photographs, USGS topographic maps and resource maps for the vicinity, and professional knowledge of desired topography and resource requirements for wildlife potentially utilizing the project site and vicinity. Multiple barriers to wildlife migration exist within the vicinity of the project site. The project site is bounded by established residential neighborhoods to the west and south, and State Route 4 to the north. Additionally, the vegetation present on-site does not lend itself to support wildlife movement through the site because it mainly consists of sparse shrubbery and limited ground coverage. As previously mentioned, the majority of the on-site vegetation consists of small weeds and invasive plants. Suisun Bay, which offers quality summer nesting habitat for many species of birds, is not in close enough proximity to the project site that any migrating species would utilize the project site for any reason. Due to the foregoing reasons, it was determined that the development of the 2018 Project would not have substantial adverse impacts on fish and wildlife movement corridors.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

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3.3 - Greenhouse Gas Emissions

3.3.1 - Introduction

This section describes existing greenhouse gas (GHG) emissions conditions globally and locally as well as the relevant regulatory framework. This section also evaluates the potential impacts related to GHG emissions and energy that could result from implementation of the 2018 Project. (The 2004 Final EIR did not include any discussion of GHG emissions.) Information included in this section is based, in part, on 2018 project-specific GHG emissions and energy modeling results utilizing California Emissions Estimator Model (CalEEMod) (version 2016.3.2) (complete modeling output in Appendix C).

3.3.2 - Environmental Setting

Climate Change

Climate change is a change in the average weather of the Earth that is measured by alterations in wind patterns, storms, precipitation, and temperature. These changes are assessed using historical records of temperature changes occurring in the past, such as during previous ice ages. Many of the concerns regarding climate change use this data to extrapolate a level of statistical significance specifically focusing on temperature records from the last 150 years (the “Industrial Age”) that differ from previous climate changes in rate and magnitude.

The United Nations Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. In its Fourth Assessment Report, the IPCC predicted that the global mean temperature change from 1990 to 2100, given six scenarios, could range from 1.1 degrees Celsius (°C) to 6.4°C. Regardless of analytical methodology, global average temperatures and sea levels are expected to rise under all scenarios (IPCC 2007a).¹ The report also concluded that “[w]arming of the climate system is unequivocal,” and that “[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations.”

An individual project cannot generate enough GHG emissions to effect a discernible change in global climate. However, the 2018 Project participates in the potential for global climate change by its incremental contribution of GHGs combined with the cumulative increase of all other sources of GHGs, which when taken together, constitute potential influences on global climate change.

Consequences of Climate Change in California

In California, climate change may result in consequences such as the following.^{2,3}

¹ Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller [eds.]). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Website: www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html. Accessed June 15, 2017.

² California Climate Change Center. (CCCC). 2006. Our Changing Climate, Assessing the Risks to California: A Summary Report from the California Climate Change Center. July 2006. CEC-500-2006-077. Website: www.scc.ca.gov/webmaster/ftp/pdf/climate_change

- **A reduction in the quality and supply of water from the Sierra snowpack.** If heat-trapping emissions continue unabated, more precipitation will fall as rain instead of snow, and the snow that does fall will melt earlier, reducing the Sierra Nevada spring snowpack by as much as 70 to 90 percent. This can lead to challenges in securing adequate water supplies. It can also lead to a potential reduction in hydropower.
- **Increased risk of large wildfires.** If rain increases as temperatures rise, wildfires in the grasslands and chaparral ecosystems of Southern California are estimated to increase by approximately 30 percent toward the end of the 21st century because more winter rain will stimulate the growth of more plant “fuel” available to burn in the fall. In contrast, a hotter, drier climate could promote up to 90 percent more Northern California fires by the end of the century by drying out and increasing the flammability of forest vegetation.
- **Reductions in the quality and quantity of certain agricultural products.** The crops and products likely to be adversely affected include wine grapes, fruit, nuts, and milk.
- **Exacerbation of air quality problems.** If temperatures rise to the medium warming range, there could be 75 to 85 percent more days with weather conducive to ozone formation in Los Angeles and the San Joaquin Valley, relative to today’s conditions. This is more than twice the increase expected if rising temperatures remain in the lower warming range. This increase in air quality problems could result in an increase in asthma and other health-related problems.
- **A rise in sea levels resulting in the displacement of coastal businesses and residences.** During the past century, sea levels along California’s coast have risen about 7 inches. If emissions continue unabated and temperatures rise into the higher anticipated warming range, sea level is expected to rise an additional 22 to 35 inches by the end of the century. Elevations of this magnitude would inundate coastal areas with salt water, accelerate coastal erosion, threaten vital levees and inland water systems, and disrupt wetlands and natural habitats.
- **An increase in temperature and extreme weather events.** Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in California. More heat waves can exacerbate chronic disease or heat-related illness.
- **A decrease in the health and productivity of California’s forests.** Climate change can cause an increase in wildfires, an enhanced insect population, and establishment of non-native species.

Project Area (Contra Costa County)

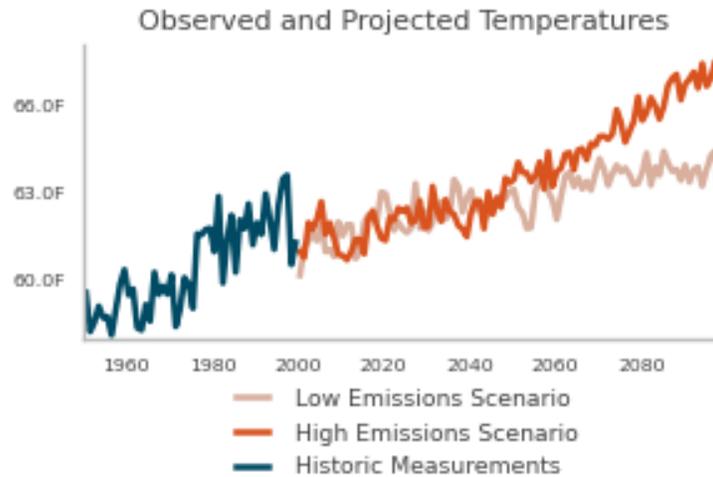
In California, climate change may result in consequences such as the following (from CCCC 2006 and Moser et al. 2009). Figure 1 displays a chart of measured historical and projected annual average temperatures in the project area. As shown in the figure, temperatures are expected to rise in the

/assessing_risks.pdf.

³ Moser et al. 2009. Moser, Susie, Guido Franco, Sarah Pittiglio, Wendy Chou, Dan Cayan. 2009. The Future Is Now: An Update on Climate Change Science Impacts and Response Options for California. California Energy Commission, PIER Energy-Related Environmental Research Program. CEC-500-2008-071. Website: www.energy.ca.gov/2008publications/CEC-500-2008-071/CEC-500-2008-071.PDF.

low and high GHG emissions scenarios. The results indicate that temperatures are predicted to increase by 3.4°F under the low emission scenario and 5.8°F under the high emissions scenario.

Figure 1: Observed and Projected Temperatures for Climate Change in the Project Area



Source: CalAdapt 2018.

Greenhouse Gases and Global Emission Sources

Gases that trap heat in the atmosphere are referred to as GHGs. The effect is analogous to the way a greenhouse retains heat. Common GHGs include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, ozone, and aerosols. Natural processes and human activities emit GHGs. The presence of GHGs in the atmosphere affects the Earth's temperature. It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Individual GHG compounds have varying global warming potential and atmospheric lifetimes. The global warming potential is the potential of a gas or aerosol to trap heat in the atmosphere. To describe how much global warming a given type and amount of GHG may cause, the CO₂ equivalent (CO₂e) is used. The calculation of the CO₂ equivalent is a consistent methodology for comparing GHG emissions since it normalizes various GHG emissions to a consistent reference gas, CO₂. For example, CH₄'s warming potential of 25 indicates that CH₄ has 25 times greater warming effect than CO₂ on a molecule-per-molecule basis. A CO₂ equivalent is the mass emissions of an individual GHG multiplied by its global warming potential. As described in Table 3.3-1, the GHGs defined by Assembly Bill 32 (AB 32) (see the Climate Change Regulatory Environment section for a description) include CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. A seventh GHG, nitrogen trifluoride (NF₃), was added to Health and Safety Code section 38505(g)(7) as a GHG of concern.

Table 3.3-1: Description of Greenhouse Gases of California Concern

Greenhouse Gas	Description and Physical Properties	Sources
Nitrous oxide	Nitrous oxide (laughing gas) is a colorless GHG. It has a lifetime of 114 years. Its global warming potential is 298.	Microbial processes in soil and water, fuel combustion, and industrial processes.
Methane	Methane is a flammable gas and is the main component of natural gas. It has a lifetime of 12 years. Its global warming potential is 25.	Methane is extracted from geological deposits (natural gas fields). Other sources are landfills, fermentation of manure, and decay of organic matter.
Carbon dioxide	Carbon dioxide (CO ₂) is an odorless, colorless, natural GHG. Carbon dioxide's global warming potential is 1. The concentration in 2005 was 379 parts per million (ppm), which is an increase of about 1.4 ppm per year since 1960.	Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.
Hydrofluorocarbons	Hydrofluorocarbons are a group of GHGs containing carbon, chlorine, and at least one hydrogen atom. Global warming potentials range from 140 to 11,700.	Hydrofluorocarbons are synthetic manmade chemicals used as a substitute for chlorofluorocarbons in applications such as automobile air conditioners and refrigerants.
Perfluorocarbons	Perfluorocarbons have stable molecular structures and only break down by ultraviolet rays about 60 kilometers above Earth's surface. Because of this, they have long lifetimes, between 10,000 and 50,000 years. Global warming potentials range from 6,500 to 9,200.	Two main sources of perfluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	Sulfur hexafluoride (SF ₆) is an inorganic, odorless, colorless, and nontoxic, nonflammable gas. It has a lifetime of 3,200 years. It has a high global warming potential, 23,900.	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas.
Nitrogen trifluoride	Nitrogen trifluoride (NF ₃) was added to Health and Safety Code section 38505(g)(7) as a GHG of concern. It has a high global warming potential of 17,200.	This gas is used in electronics manufacture for semiconductors and liquid crystal displays.
Sources: Compiled from a variety of sources, primarily Intergovernmental Panel on Climate Change 2007a and 2007b.		

California has begun the process of addressing pollutants referred to as short-lived climate pollutants. The short-lived climate pollutants include three main components: black carbon, fluorinated gases, and methane. The California Air Resources Board (ARB) approved the short-lived *Climate Pollutant Reduction Strategy* in March 2017. The ARB has completed an emission inventory

of these pollutants, identified research needs, identified existing and potential new control measures that offer co-benefits, and coordinated with other State agencies and districts to develop measures.⁴ Sources of black carbon are already regulated by the ARB, and Bay Area Air Quality Management District (BAAQMD) criteria pollutant and toxic regulations that control fine particulate emissions from diesel engines and other combustion sources.⁵ Additional controls on the sources of black carbon specifically for their GHG impacts beyond those required for toxic and fine particulates are not likely to be needed.

Human Health Effects of GHG Emissions

GHG emissions from development projects would not result in concentrations that would directly impact public health. However, the cumulative effects of GHG emissions on climate change have the potential to cause adverse effects to human health.

The United States Global Change Research Program, in its report, *Global Climate Change Impacts in the U.S.* (2009), has analyzed the degree to which impacts on human health are expected to impact the United States.

Potential effects of climate change on public health include:

- **Direct Temperature Effects:** Climate change may directly affect human health through increases in average temperatures, which are predicted to increase the incidence of heat waves and hot extremes.
- **Extreme Events:** Climate change may affect the frequency and severity of extreme weather events, such as hurricanes and extreme heat and floods, which can be destructive to human health and well-being.
- **Climate-Sensitive Diseases:** Climate change may increase the risk of some infectious diseases, particularly those diseases that appear in warm areas and are spread by mosquitoes and other insects, such as malaria, dengue fever, yellow fever, and encephalitis.
- **Air Quality:** Respiratory disorders may be exacerbated by warming-induced increases in the frequency of smog (ground-level ozone) events and particulate air pollution (United States Environmental Protection Agency [EPA] 2009a).

Although there could be health effects resulting from changes in the climate and the consequences that can occur, inhalation of GHGs at levels currently in the atmosphere would not result in adverse health effects, with the exception of ozone and aerosols (particulate matter). At very high indoor concentrations (not at levels existing outside), CO, CH₄, sulfur hexafluoride, and some chlorofluorocarbons can cause suffocation as the gases can displace oxygen (Centers for Disease Control and Prevention [CDC] 2010 and Occupational Safety and Health Administration [OSHA] 2003).

⁴ California Air Resources Board (ARB). 2016b. Proposed Short-Lived Climate Pollutant Reduction Strategy. Website: <http://www.arb.ca.gov/cc/shortlived/shortlived.htm>.

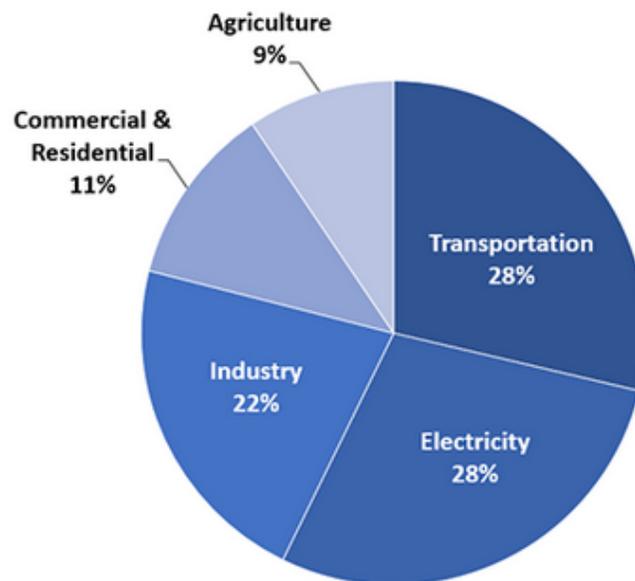
⁵ California Air Resources Board (ARB). 2015c. Short-Lived Climate Pollutant Reduction Strategy, Concept Paper. May. Website: http://www.arb.ca.gov/cc/shortlived/concept_paper.pdf. Accessed June 3, 2017.

Existing GHG Emissions

United States GHG Inventory

Since 1990, emissions in the United States have increased at an average annual rate of 0.1 percent. Total GHG emissions increased by 2.4 percent from 1990 to 2016 (from 6,233.2 million metric tons [MMT] CO₂e in 1990 to 6,511.3 MMT CO₂e in 2014) in the United States, while total GHG emissions decreased by 1.9 percent from 2015 to 2016.⁶ Figure 3.3-2 presents 2016 United States GHG emissions by economic sector. In 2016, the decrease in GHG emissions compared to 2015 was largely attributed to a decrease in CO₂ emissions from fossil fuel consumption. Multiple factors contributed to the decrease in fossil fuel consumption, such as the substitution of coal to natural gas and other non-fossil energy sources in the electric power sector, and warmer winter conditions in 2016 which led to a decrease in heating fuel demand for the residential and commercial sector. Transportation emissions also increased because of a small increase in vehicle miles traveled. There was also an increase in industrial production across multiple sectors, resulting in slight increases in industrial-sector emissions.⁷

Figure 3.3-2: 2016 United States Greenhouse Gas Emissions by Economic Sector



Total Emissions in 2016 = 6,511 [Million Metric Tons of CO₂ equivalent](#)

Source: EPA, 2018⁸

Note: Emissions shown do not include carbon sinks such as change in land uses and forestry.

⁶ United States Environmental Protection Agency (EPA). 2016. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014. EPA 430-R-16-002. Website: <https://www.epa.gov/sites/production/files/2017-04/documents/us-ghg-inventory-2016-main-text.pdf>. Accessed June 2, 2018.

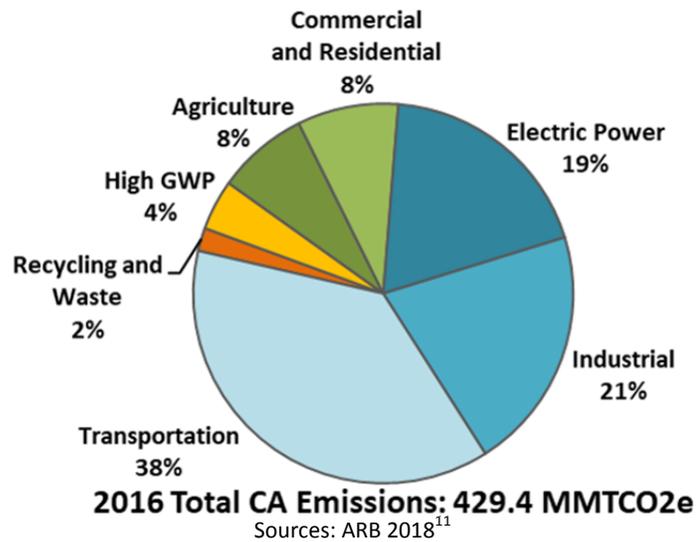
⁷ United States Environmental Protection Agency (EPA). 2016. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014. EPA 430-R-16-002. Website: <https://www.epa.gov/sites/production/files/2017-04/documents/us-ghg-inventory-2016-main-text.pdf>. Accessed June 2, 2018.

⁸ United States Environmental Protection Agency (EPA). 2018. Sources of Greenhouse Gas Emissions. Website: <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>. Accessed December 19, 2018.

California GHG Inventory

As the second largest emitter of GHG emissions in the United States and the 12th to 16th largest GHG emissions emitter in the world, California contributes a large quantity (429.24 MMT CO₂e in 2016) of GHG emissions to the atmosphere.⁹ Emissions of CO₂ are byproducts of fossil-fuel combustion and are attributable in large part to human activities associated with transportation, industry/manufacturing, electricity and natural gas consumption, and agriculture. In California, the transportation sector is the largest emitter at 38 percent of GHG emissions, followed by industrial at 21 percent of GHG emissions (Figure 3.3-3).¹⁰

Figure 3.3-3: 2016 California Greenhouse Gas Emissions by Sector



Bay Area Air Quality Management District GHG Inventory

BAAQMD published a GHG inventory for the San Francisco Bay Area (Bay Area), which provides an estimate of GHG emissions in the base year 2011 for all counties located in the jurisdiction of BAAQMD: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, Napa, and the southern portions of Solano and Sonoma counties.¹² This GHG inventory is based on the standards for criteria pollutant inventories and is intended to support BAAQMD’s climate protection activities.

Table 3.3-2 shows the 2011 breakdown of emissions by end-use sector for each county within the BAAQMD’s jurisdiction. The estimated GHG emissions are presented in CO₂e, which weights each GHG by its global warming potential (GWP). The GWPs used in BAAQMD inventory are from the Second Assessment Report of the IPCC.

⁹ California Climate Change Center. (CCCC). 2006. Our Changing Climate, Assessing the Risks to California: A Summary Report from the California Climate Change Center. July 2006. CEC-500-2006-077. Website: www.scc.ca.gov/webmaster/ftp/pdf/climate_change/assessing_risks.pdf. Accessed June 2, 2018.

¹⁰ California Air Resources Board (ARB). 2018. California Greenhouse Inventory-Graphs. Website: <https://www.arb.ca.gov/cc/inventory/data/graph/graph.htm>. Accessed August 27, 2018.

¹¹ California Air Resources Board (ARB). 2018. California Greenhouse Inventory-Graphs. Website: <https://www.arb.ca.gov/cc/inventory/data/data.htm>. Accessed September 27, 2018.

¹² Bay Area Air Quality Management District (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011. January. Website: http://www.baaqmd.gov/~media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf. Accessed June 5, 2018.

In 2011, GHG emissions from the portion of Contra Costa within the BAAQMD jurisdiction accounted for approximately 36 percent of the Bay Area’s total GHG emissions.¹³ Transportation is the largest GHG emissions sector in the Bay Area, followed by industrial/commercial, electricity generation and cogeneration, and residential fuel usage. In Contra Costa County, industrial/commercial is the largest GHG emitting sector, followed by transportation.

Table 3.3-2: 2011 County Emissions Breakdown by Sector (MMT CO₂e/Year)

Sector	Alameda	Contra Costa	Marin	Napa	San Francisco	San Mateo	Santa Clara	Solano*	Sonoma*
Industrial/Commercial	2.7	17.8	0.4	0.2	1.2	1.4	4.1	2.7	0.5
Residential Fuel	1.3	1.0	0.3	0.1	0.9	0.8	1.5	0.3	0.4
Electricity/Co-gen.	0.9	7.2	0.1	0.1	0.5	0.4	2.2	0.4	0.2
Off-Road Equipment	0.2	0.2	0.0	0.0	0.2	0.1	0.4	0.0	0.1
Transportation	7.9	5.0	1.3	0.9	3.0	5.0	7.6	1.6	2.0
Agriculture/Farming	0.1	0.2	0.2	0.1	0.0	0.0	0.2	0.1	0.2
Total	13.2	31.4	2.4	1.5	5.7	7.7	16.0	5.1	3.5

Notes:

* Portion within BAAQMD jurisdiction

BAAQMD = Bay Area Air Quality Management District; CO₂e = carbon dioxide equivalent; co-gen = cogeneration

Source: Bay Area Air Quality Management District (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011. January. Website: http://www.baaqmd.gov/~media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf. Accessed June 5, 2018.

City of Pittsburg

In 2007, the City of Pittsburg, along with nearby local governments, joined the Cities for Climate Protection program offered by the International Council for Local Environmental Initiatives (ICLEI). The ICLEI is an international association of cities and counties initiating climate action and other sustainability efforts. Through ICLEI, the City of Pittsburg developed an inventory of their GHG emissions. In the baseline year 2005, the City of Pittsburg generated approximately 4.4 MMT CO₂e of GHG emissions.

As shown in Figure 3.6-4, the largest sector to generate GHG emissions is the industrial sector, followed by the regional transportation sector.

¹³ Bay Area Air Quality Management District (BAAQMD). 2015. Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011. January. Website: http://www.baaqmd.gov/~media/files/planning-and-research/emission-inventory/by2011_ghgsummary.pdf. Accessed June 5, 2018.

Table 3.3-3: City of Pittsburg Greenhouse Gas Emissions by Sector

Sector	MT CO ₂ e	Percent
Industrial	3,984,457	90.7%
Regional Transportation	174,088	4.0%
Local Road Transportation	65,695	1.5%
Commercial	71,775	1.6%
Residential	74,458	1.7%
Waste	23,741	0.5%
Total	4,394,214	100

Notes:
MT CO₂e: metric tons CO₂e/Year; CO₂e = carbon dioxide equivalent; source:
City of Pittsburg. 2009. 2005 Greenhouse Gas Emissions Baseline Inventory & Analysis. October 2009. Website:
<http://www.ci.pittsburg.ca.us/Modules/ShowDocument.aspx?documentid=3168>.

Project Site

The project site is currently vacant and not generating any GHG emissions.

3.3.3 - Regulatory Framework

International

International organizations such as the ones discussed below have made substantial efforts to reduce GHG emissions. Preventing human-induced climate change will require the participation of all nations in solutions to address the issue.

Intergovernmental Panel on Climate Change

In 1988, the United Nations and the World Meteorological Organization established the Intergovernmental Panel on Climate Change to assess the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation.

United Nations Climate Change Framework Convention.

On March 21, 1994, the United States joined a number of countries around the world in signing the United Nations Climate Change Framework Convention. Under the Convention, governments agreed to gather and share information on GHG emissions, national policies, and best practices; launch national strategies for addressing GHG emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries; and cooperate in preparing for adaptation to the impacts of climate change.

Paris Climate Change Agreement

Parties to the United Nations Framework Convention on Climate Change (UNFCCC) reached a landmark agreement on December 12, 2015 in Paris, charting a fundamentally new course in the

two-decade-old global climate effort. Culminating in a 4-year negotiating round, the new treaty ends the strict differentiation between developed and developing countries that characterized earlier efforts, replacing it with a common framework that commits all countries to put forward their best efforts and to strengthen them in the years ahead. This includes, for the first time, requirements that all parties report regularly on their emissions and implementation efforts, and undergo international review. The agreement and a companion decision by parties were the key outcomes of the conference, known as the 21st session of the UNFCCC Conference of the Parties, or COP 21.

On June 1, 2017, President Trump announced the decision for the United States to withdraw from the Paris Climate Accord.¹⁴ California remains committed to combating climate change through programs aimed to reduce GHG emissions.¹⁵

Federal

Prior to the last decade, there were no concrete federal regulations of GHGs or major planning for climate change adaptation. Since then, federal activity has increased. The following are actions regarding the federal government, GHGs, and fuel efficiency.

GHG Endangerment

Massachusetts v. EPA (Supreme Court Case 05-1120) was argued before the United States Supreme Court on November 29, 2006, in which it was petitioned that the EPA regulate four GHGs, including CO₂, under Section 202(a)(1) of the CAA. A decision was made on April 2, 2007, in which the Supreme Court found that GHGs are air pollutants covered by the CAA. The Supreme Court held that the EPA Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two distinct findings regarding GHGs under section 202(a) of the CAA. These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed in the section “Clean Vehicles” below. After a lengthy legal challenge, the United States Supreme Court declined to review an Appeals Court ruling upholding that upheld the EPA Administrator findings.¹⁶

Clean Vehicles

Congress first passed the Corporate Average Fuel Economy law in 1975 to increase the fuel economy of cars and light duty trucks. The law has become more stringent over time. On May 19, 2009, President Obama put in motion a new national policy to increase fuel economy for all new cars and trucks sold in the United States. On April 1, 2010, the EPA and the Department of Transportation’s

¹⁴ The White House. Statement by President Trump on the Paris Climate Accord. Website: <https://www.whitehouse.gov/the-press-office/2017/06/01/statement-president-trump-paris-climate-accord>. Accessed June 23, 2017.

¹⁵ California Air Resources Board (ARB). 2017. New Release: California and China Team Up to Push for Millions More Zero-emission Vehicles. Website: <https://www.arb.ca.gov/newsreel/newsrelease.php?id=934>. Accessed June 27, 2017.

¹⁶ United States Environmental Protection Agency (EPA). 2009. Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Section 202(a) of the Clean Air Act. Website: <https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean>

National Highway Safety Administration announced a joint final rule establishing a national program that would reduce GHG emissions and improve fuel economy for new cars and trucks sold in the United States.

The first phase of the national program applies to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. They require these vehicles to meet an estimated combined average emissions level of 250 grams of CO₂ per mile, equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO₂ level solely through fuel economy improvements. Together, these standards would cut CO₂ emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012–2016). The EPA and the National Highway Safety Administration issued final rules on a second-phase joint rulemaking, establishing national standards for light-duty vehicles for model years 2017 through 2025 in August 2012 (EPA 2012). The new standards for model years 2017 through 2025 apply to passenger cars, light-duty trucks, and medium duty passenger vehicles. The final standards are projected to result in an average industry fleetwide level of 163 grams/mile of CO₂ in model year 2025, which is equivalent to 54.5 miles per gallon (mpg) if achieved exclusively through fuel economy improvements.

The EPA and the United States Department of Transportation issued final rules for the first national standards to reduce GHG emissions and improve fuel efficiency of heavy-duty trucks and buses on September 15, 2011, which became effective November 14, 2011. For combination tractors, the agencies proposed engine and vehicle standards that began in the 2014 model year and achieve up to a 20-percent reduction in CO₂ emissions and fuel consumption by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10-percent reduction for gasoline vehicles, and a 15-percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the engine and vehicle standards would achieve up to a 10-percent reduction in fuel consumption and CO₂ emissions from the 2014 to 2018 model years.

United States Consolidated Appropriations Act (Mandatory GHG Reporting)

The Consolidated Appropriations Act of 2008, passed in December 2007, requires the establishment of mandatory GHG reporting requirements. On September 22, 2009, the EPA issued the Final Mandatory Reporting of Greenhouse Gases Rule, which became effective January 1, 2010. The rule requires reporting of GHG emissions from large sources and suppliers in the United States, and is intended to collect accurate and timely emissions data to inform future policy decisions. Under the rule, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions are required to submit annual reports to the EPA.

New GHG Source Review

The EPA issued a final rule on May 13, 2010, that establishes thresholds for GHGs that define when permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This final rule “tailors” the

requirements of these Clean Air Act permitting programs to limit which facilities will be required to obtain Prevention of Significant Deterioration and Title V permits.

The EPA estimates that facilities responsible for nearly 70 percent of the national GHG emissions from stationary sources will be subject to permitting requirements under this rule. This includes the nation's largest GHG emitters—power plants, refineries, and cement production facilities.

Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units

As required by a settlement agreement, the EPA proposed new performance standards for CO₂ emissions for new, affected, fossil fuel-fired electric utility generating units on March 27, 2012. New sources greater than 25 megawatts would be required to meet an output based standard of 1,000 pounds of CO₂ per megawatt-hour, based on the performance of widely used natural gas combined cycle technology.

Cap and Trade

Cap and trade refers to a policy tool where emissions are limited to a certain amount and can be traded, or provides flexibility on how the emitter can comply. There is no federal GHG cap-and-trade program currently; however, some states have joined to create initiatives to provide a mechanism for cap and trade.

The Western Climate Initiative partner jurisdictions have developed a comprehensive initiative to reduce regional GHG emissions to 15 percent below 2005 levels by 2020. The partners are California, British Columbia, Manitoba, Ontario, and Quebec. Currently only California and Quebec are participating in the cap and trade program.¹⁷

State

Legislative Actions to Reduce GHGs

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any State in the nation. Some legislation such as the landmark AB 32 California Global Warming Solutions Act of 2006 was specifically enacted to address GHG emissions. Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

AB 1493—Pavley Regulations and Fuel Efficiency Standards

California AB 1493, enacted on July 22, 2002, required the ARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the EPA's denial of an implementation waiver. The EPA subsequently granted the requested waiver in 2009, which was upheld by the

¹⁷ Center for Climate and Energy Solutions (C2ES). 2015b. Multi-State Climate Initiatives. Website: <http://www.c2es.org/us-states-regions/regional-climate-initiatives>. Accessed April 26, 2016.

United States District Court for the District of Columbia in 2011.¹⁸ The standards are to be phased in during the 2009 through 2016 model years.

The second phase of the implementation for the Pavley bill was incorporated into Amendments to the Low-Emission Vehicle (LEV) Program referred to as LEV III or the Advanced Clean Cars program. The Advanced Clean Car program combines the control of smog-causing pollutants and GHG emissions into a single coordinated package of requirements for model years 2017 through 2025. The regulation will reduce GHGs from new cars by 34 percent from 2016 levels by 2025. The new rules will reduce pollutants from gasoline and diesel-powered cars, and deliver increasing numbers of zero-emission technologies, such as full battery electric cars, newly emerging plug-in hybrid electric vehicles and hydrogen fuel cell cars. The regulations will also ensure adequate fueling infrastructure is available for the increasing numbers of hydrogen fuel cell vehicles planned for deployment in California.¹⁹

AB 32—California Global Warming Solutions Act of 2006

The California State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that GHGs emitted in California be reduced to 1990 levels by the year 2020. “Greenhouse gases” as defined under AB 32 include CO₂, CH₄, N₂O, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride. Since AB 32 was enacted, a seventh chemical, nitrogen trifluoride, has also been added to the list of GHGs.

The ARB is the State agency charged with monitoring and regulating sources of GHGs. The ARB approved the 1990 GHG emissions level of 427 MMT CO₂e on December 6, 2007.²⁰ Therefore, to meet the State’s target, emissions generated in California in 2020 are required to be equal to or less than 427 MMT CO₂e. Emissions in 2020 in a Business as Usual (BAU) scenario were estimated to be 596 MMT CO₂e, which do not account for reductions from AB 32 regulations²¹. At that rate, a 28 percent reduction was required to achieve the 427 MMT CO₂e 1990 inventory. In October 2010, the ARB prepared an updated 2020 forecast to account for the effects of the 2008 recession and slower forecasted growth. The 2020 inventory without the benefits of adopted regulation is now estimated at 545 MMT CO₂e. Therefore, under the updated forecast, a 21.7 percent reduction from BAU is required to achieve 1990 levels.²² On July 11, 2018, ARB announced that California met its target of reducing GHG emissions to 1990 levels.²³

¹⁸ California Air Resources Board (ARB). 2013d. Clean Car Standards—Pavley, Assembly Bill 1493. Website: <http://www.arb.ca.gov/cc/ccms/ccms.htm>. Accessed February 14, 2017.

¹⁹ California Air Resources Board (ARB). 2011c. Status of Scoping Plan Recommended Measures. Website: www.arb.ca.gov/cc/scopingplan/sp_measures_implementation_timeline.pdf. Accessed February 14, 2017.

²⁰ California Air Resources Board (ARB). 2007. Staff Report. California 1990 Greenhouse Gas Level and 2020 Emissions Limit. November 16, 2007. Website: www.arb.ca.gov/cc/inventory/pubs/reports/staff_report_1990_level.pdf. Accessed February 14, 2017.

²¹ California Air Resources Board (ARB). 2008. (includes edits made in 2009) Climate Change Scoping Plan, a framework for change. Website: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed February 14, 2017.

²² California Air Resources Board (ARB). 2010a. 2020 Greenhouse Gas Emissions Projection and BAU Scenario Emissions Estimate. Website: http://www.arb.ca.gov/cc/inventory/archive/captrade_2010_projection.pdf. Accessed February 14, 2017.

²³ California Air Resources Board (ARB). 2018. Climate Pollutants Fall Below 1990 Levels for First Time. Website: <https://ww2.arb.ca.gov/news/climate-pollutants-fall-below-1990-levels-first-time>. Date Accessed December 20, 2018

ARB Scoping Plan

The *ARB Climate Change Scoping Plan* (“Scoping Plan”) contains measures designed to reduce the State’s emissions to 1990 levels by the year 2020 to comply with AB 32²⁴. The Scoping Plan identifies recommended measures for multiple GHG emission sectors and the associated emission reductions needed to achieve the year 2020 emissions target—each sector has a different emission reduction target. Most of the measures target the transportation and electricity sectors. As stated in the Scoping Plan, the key elements of the strategy for achieving the 2020 GHG target include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California’s clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State’s long-term commitment to AB 32 implementation.

In addition, the Scoping Plan differentiates between “capped” and “uncapped” strategies. Capped strategies are subject to the proposed cap-and-trade program. Implementation of the capped strategies is calculated to achieve a sufficient amount of reductions by 2020 to achieve the emission target contained in AB 32. Uncapped strategies that will not be subject to the cap-and-trade emissions caps and requirements are provided as a margin of safety by accounting for additional GHG emission reductions²⁵.

The ARB approved the First Update to the Scoping Plan (Update) on May 22, 2014. The Update builds upon the Initial Scoping Plan with new strategies and recommendations.

Senate Bill 375—Sustainable Communities and Climate Protection Act

Senate Bill (SB) 375 was signed into law on September 30, 2008. According to SB 375, the transportation sector is the largest contributor of GHG emissions, which emits over 40 percent of the total GHG emissions in California. SB 375 states, “[w]ithout improved land use and transportation policy, California will not be able to achieve the goals of AB 32.” SB 375 does the following: (1)

²⁴ California Air Resources Board (ARB). 2008. (includes edits made in 2009) Climate Change Scoping Plan, a framework for change. Website: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed February 14, 2017.

²⁵ California Air Resources Board (ARB). 2008 (includes edits made in 2009). Climate Change Scoping Plan, a framework for change. Website: http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf.

requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing GHG emissions, (2) aligns planning for transportation and housing, and (3) creates specified incentives for the implementation of the strategies.

SB 32—California Global Warming Solutions Act of 2006: emissions limit

The Governor signed SB 32 in September of 2016, giving ARB the statutory responsibility to include the 2030 target previously contained in Executive Order B-30-15 in the *2017 Climate Change Scoping Plan Update*. SB 32 states that “In adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by this division, the state [air resources] board shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030.” The *2017 Climate Change Scoping Plan Update* addressing the SB 32 targets was adopted on December 14, 2017. The major elements of the framework proposed to achieve the 2030 target are as follows:

1. SB 350
 - Achieve 50 percent Renewables Portfolio Standard (RPS) by 2030.
 - Doubling of energy efficiency savings by 2030.
2. Low Carbon Fuel Standard (LCFS)
 - Increased stringency (reducing carbon intensity 18 percent by 2030, up from 10 percent in 2020).
3. Mobile Source Strategy (Cleaner Technology and Fuels Scenario)
 - Maintaining existing GHG standards for light- and heavy-duty vehicles.
 - Put 4.2 million zero-emission vehicles (ZEVs) on the roads.
 - Increase ZEV buses, delivery and other trucks.
4. Sustainable Freight Action Plan
 - Improve freight system efficiency.
 - Maximize use of near-zero emission vehicles and equipment powered by renewable energy.
 - Deploy over 100,000 zero-emission trucks and equipment by 2030.
5. Short-Lived Climate Pollutant (SLCP) Reduction Strategy
 - Reduce emissions of methane and hydrofluorocarbons 40 percent below 2013 levels by 2030.
 - Reduce emissions of black carbon 50 percent below 2013 levels by 2030.
6. SB 375 Sustainable Communities Strategies
 - Increased stringency of 2035 targets.
7. Post-2020 Cap-and-Trade Program
 - Declining caps, continued linkage with Québec, and linkage to Ontario, Canada.
 - The ARB will look for opportunities to strengthen the program to support more air quality co-benefits, including specific program design elements. In Fall 2016, ARB staff described potential future amendments including reducing the offset usage limit, redesigning the allocation strategy to reduce free allocation to support increased

technology and energy investment at covered entities and reducing allocation if the covered entity increases criteria or toxics emissions over some baseline.

8. 20 percent reduction in GHG emissions from the refinery sector.
9. By 2018, develop Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.²⁶

SB 1368—Emission Performance Standards

In 2006, the State Legislature adopted SB 1368, which was subsequently signed into law by the Governor. SB 1368 directs the California Public Utilities Commission (CPUC) to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 seeks to limit carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than 5 years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. CPUC adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs CO₂ per megawatt-hour (MWh).

SB 1078—Renewable Electricity Standards

On September 12, 2002, Governor Gray Davis signed SB 1078, requiring California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established an RPS target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Governor Schwarzenegger also directed ARB (Executive Order S-21-09) to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020. The ARB Board approved the Renewable Electricity Standard on September 23, 2010, by Resolution 10-23.

SB 100—The 100 Percent Clean Energy Act of 2018

On September 10, 2018, Governor Jerry Brown signed SB 100, which further advances the Renewable Portfolio Standard target for California to require load-serving entities to increase their renewable energy mix to 50 percent by 2026, and 60 percent by 2030. The bill is intended to transition towards sourcing 100 percent of retail electricity sales from eligible renewable energy sources and zero-carbon sources by 2045.²⁷

SB 350—Clean Energy and Pollution Reduction Act

In 2015, the State legislature approved and the Governor signed SB 350 which reaffirms California's commitment to reducing its GHG emissions and addressing climate change. Key provisions include an increase in the RPS, higher energy efficiency requirements for buildings, initial strategies towards a regional electricity grid, and improved infrastructure for electric vehicle charging stations.

²⁶ California Air Resources Board (ARB). 2017. California's 2017 Climate Change Scoping Plan. November 2017. Website: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

²⁷ California Legislative Information (California Leginfo). 2018. SB-100 California Renewable Portfolio Standard Program: emissions of greenhouse gases. Website: https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201720180SB100.

Provisions for a 50 percent reduction in the use of petroleum statewide were removed from the Bill due to opposition and concern that it would prevent the Bill's passage. Specifically, SB 350 requires the following to reduce statewide GHG emissions:

- Increase the amount of electricity procured from renewable energy sources from 33 percent to 50 percent by 2030, with interim targets of 40 percent by 2024, and 25 percent by 2027.
- Double the energy efficiency in existing buildings by 2030. This target will be achieved through the California Public Utility Commission, the California Energy Commission, and local publicly owned utilities.
- Reorganize the Independent System Operator (ISO) to develop more regional electrify transmission markets and to improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.²⁸

California SBX 7-7—Water Conservation Act

This 2009 legislation directs urban retail water suppliers to set individual 2020 per capita water use targets and begin implementing conservation measures to achieve those goals. Meeting this statewide goal of 20 percent decrease in demand will result in a reduction of almost 2 million acre-feet in urban water use in 2020.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs through the use of Executive Orders. Although not regulatory, they set the tone for the State and guide the actions of State agencies.

Executive Order S-3-05

Former California Governor Arnold Schwarzenegger announced on June 1, 2005, through Executive Order S-3-05, the following reduction targets for GHG emissions:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order S-01-07: Low Carbon Fuel Standard

The Governor signed Executive Order S 01-07 on January 18, 2007. The order mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established an LCFS and directed

²⁸ California Legislative Information (California Leginfo). 2015. Senate Bill 350 Clean Energy and Pollution Reduction Act of 2015. Website: https://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB350. Accessed September 28, 2017.

the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, ARB, the University of California, and other agencies to develop and propose protocols for measuring the “life-cycle carbon intensity” of transportation fuels. This analysis supporting development of the protocols was included in the State Implementation Plan for alternative fuels (State Alternative Fuels Plan adopted by California Energy Commission on December 24, 2007) and was submitted to the ARB for consideration as an “early action” item under AB 32. The ARB adopted the LCFS on April 23, 2009.

The LCFS was subject to legal challenge in 2011. Ultimately, on August 8, 2013, the Fifth District Court of Appeal (California) ruled that ARB failed to comply with California Environmental Quality Act (CEQA) and the Administrative Procedure Act (APA) when adopting regulations for LCFS. In a partially published opinion, the Court of Appeal directed that Resolution 09-31 and two Executive Orders of ARB approving LCFS regulations promulgated to reduce GHG emissions be set aside. However, the court tailored its remedy to protect the public interest by allowing the LCFS regulations to remain operative while the ARB complies with the procedural requirements it failed to satisfy.

To address the Court ruling, the ARB was required to bring a new LCFS regulation to the Board for consideration in February 2015. The proposed LCFS regulation was required to contain revisions to the 2010 LCFS as well as new provisions designed to foster investments in the production of the low-carbon fuels, offer additional flexibility to regulated parties, update critical technical information, simplify and streamline program operations, and enhance enforcement. The second public hearing for the new LCFS regulation was held on September 24, 2015 and September 25, 2015, where the LCFS Regulation was adopted. The Final Rulemaking Package adopting the regulation was filed with the Office of Administrative Law (OAL) on October 2, 2015. The OAL approved the regulation on November 16, 2015.²⁹

Executive Order S-13-08

Executive Order S-13-08 states that “climate change in California during the next century is expected to shift precipitation patterns, accelerate sea level rise and increase temperatures, thereby posing a serious threat to California’s economy, to the health and welfare of its population and to its natural resources.” Pursuant to the requirements in the order, the 2009 California Climate Adaptation Strategy was adopted, which is the “. . . first Statewide, multi-sector, region-specific, and information-based climate change adaptation strategy in the United States.” Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying a direction for future research.

Executive Order B-30-15

On April 29, 2015, Governor Edmund G. Brown Jr. issued an executive order to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor’s executive order aligns California’s GHG reduction targets with those of leading international governments ahead of the United Nations Climate Change Conference in Paris late 2015. The executive order sets a new

²⁹ California Air Resources Board (ARB). 2015e. Low Carbon Fuel Standard Regulation. Website: <http://www.arb.ca.gov/regact/2015/lcfs2015/lcfs2015.htm>. Accessed September 22, 2017.

interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050, and directs the ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of MM CO₂e. The executive order also requires the State's climate adaptation plan to be updated every three years and for the State to continue its climate change research program, among other provisions.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations

California Code of Regulations, Title 20: Division 2, Chapter 4, Article 4, Sections 1601-1608: Appliance Efficiency Regulations regulates the sale of appliances in California. The Appliance Efficiency Regulations include standards for both federally regulated appliances and non-federally regulated appliances. Twenty-three categories of appliances are included in the scope of these regulations. The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State and those designed and sold exclusively for use in recreational vehicles or other mobile equipment.³⁰

Title 24 Energy Efficiency Standards

California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings, was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

The upcoming 2019 Building Energy Efficiency Standards (2019 Standards) will go into effect on January 1, 2020.³¹ The 2019 Standards focus on four key areas: smart residential photovoltaic systems, updated thermal envelope standards, residential and nonresidential ventilation requirements, and nonresidential lighting requirements.³² One of the notable change includes the solar photovoltaic systems requirement for new low-rise residential homes.

³⁰ California Energy Commission (CEC). 2012. 2013 Title 24 Building Energy Efficiency Standards Adoption Hearing Presentation. Website: http://www.energy.ca.gov/title24/2013standards/rulemaking/documents/final_rulemaking_documents/31_2013_Adoption_Hearing_Presentation_5-31.pdf. Accessed October 19, 2015.

³¹ California Energy Commission (CEC). 2018. 2019 Building Energy Efficiency Standards. March 2018. Website: https://www.energy.ca.gov/title24/2019standards/documents/2018_Title_24_2019_Building_Standards_FAQ.pdf.

³² California Energy Commission (CEC). 2018. Energy Commission Adopts Standards Requiring Solar Systems for New Homes, First in Nation. Website: https://www.energy.ca.gov/releases/2018_releases/2018-05-09_building_standards_adopted_nr.html. Accessed November 21, 2018.

Title 24 California Green Building Standards Code

California Code of Regulations Title 24, Part 11, is a comprehensive and uniform regulatory code for all residential, commercial, and school buildings that went in effect January 1, 2011. The code is updated on a regular basis, with the most recent update consisting of the 2016 California Green Building Code Standards that became effective January 1, 2017. Local jurisdictions are permitted to adopt more stringent requirements, as state law provides methods for local enhancements. State building code requirements provide the minimum standard that buildings need to meet in order to be certified for occupancy, which is generally enforced by the local building official.

Model Water Efficient Landscape Ordinance

The Model Water Efficient Landscape Ordinance (Ordinance) was required by AB 1881 Water Conservation Act. The Bill required local agencies to adopt a local landscape ordinance at least as effective in conserving water as the Model Ordinance by January 1, 2010. Reductions in water use of 20 percent consistent with (SBX-7-7) 2020 mandate are expected for Ordinance. Governor Brown's Drought Executive Order of April 1, 2015 (EO B-29-15) directed the California Department of Water Resources to update the Ordinance through expedited regulation. The California Water Commission approved the revised Ordinance on July 15, 2015, which became effective on December 15, 2015. New development projects that include landscaped areas of 500 square feet or more are subject to the Ordinance.

SB 97 and the CEQA Guidelines Update

SB 97 passed in August 2007 and was added to Section 21083.05 to the Public Resources Code. The code states "(a) On or before July 1, 2009, the Office of Planning and Research shall prepare, develop, and transmit to the Resources Agency guidelines for the mitigation of GHG emissions or the effects of GHG emissions as required by this division, including, but not limited to, effects associated with transportation or energy consumption. (b) On or before January 1, 2010, the Resources Agency shall certify and adopt guidelines prepared and developed by the Office of Planning and Research pursuant to subdivision (a)."

Section 21097 was also added to the Public Resources Code, which provided an exemption until January 1, 2010, for transportation projects funded by the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006 or projects funded by the Disaster Preparedness and Flood Prevention Bond Act of 2006, in stating that the failure to analyze adequately the effects of GHGs would not violate CEQA. The Natural Resources Agency completed the approval process and the Amendments became effective on March 18, 2010.

The 2010 CEQA Amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. The CEQA Amendments fit within the existing CEQA framework by amending existing CEQA Guidelines to reference climate change.

In January 2018, OPR transmitted its proposal for the comprehensive updates to the CEQA Guidelines to the California Natural Resources Agency. The proposed updates related to, among other items, analyzing transportation impacts pursuant to Senate Bill 743 and updates to the analysis of GHG emissions in response to the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369. In late

2018, the Natural Resources Agency finalized the updates to the CEQA Guidelines. The updated CEQA Guidelines were adopted on December 28, 2018. As further explained in Section 1 of this Draft Supplemental EIR, CEQA includes a presumption against requiring any further environmental review once an EIR has been prepared and certified for a project, and does not generally require an analysis of revisions made to laws or regulations after certification of the EIR. Furthermore, this Draft Supplemental EIR meets the content requirements for purposes of CEQA in effect when it was set out for public review. Nevertheless, for purposes of a conservative analysis, the City of Pittsburg recognizes that the California Code of Regulations³³ were recently amended. Therefore, in the City's discretion as the lead agency, in an abundance of caution and to ensure full disclosure, this Draft Supplemental EIR includes consideration of GHG Emissions utilizing the 2019 CEQA Guidelines Appendix G.

California Supreme Court GHG Ruling

In a November 30, 2015 ruling, the California Supreme Court in *Center for Biological Diversity v. California Department of Fish and Wildlife* on the Newhall Ranch project concluded that whether the project was consistent with meeting Statewide emission reduction goals is a legally permissible criterion of significance, but the significance finding for the project was not supported by a reasoned explanation based on substantial evidence. The Court offered potential solutions on pages 25–27 of the ruling to address this issue summarized below:

Specifically, the Court advised that:

- **Substantiation of Project Reductions from BAU.** A lead agency may use a BAU comparison based on the Scoping Plan's methodology if it also substantiates the reduction a particular project must achieve to comply with statewide goals. The Court suggested a lead agency could examine the "data behind the Scoping Plan's business-as-usual model" to determine the necessary project-level reductions from new land use development at the proposed location (p. 25).
- **Compliance with Regulatory Programs or Performance Based Standards.** A lead agency "might assess consistency with A.B. 32's goal in whole or part by looking to compliance with regulatory programs designed to reduce greenhouse gas emissions from particular activities. (See Final Statement of Reasons, supra, at p. 64 [greenhouse gas emissions 'may be best analyzed and mitigated at a programmatic level'.])" To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other state agencies, a lead agency could appropriately rely on their use as showing compliance with 'performance based standards' adopted to fulfill 'a statewide . . . plan for the reduction or mitigation of greenhouse gas emissions' (CEQA Guidelines § 15064.4(a)(2), (b)(3); see also id., § 15064(h)(3) [determination that impact is not cumulatively

³³ Pursuant to CEQA Guidelines Section 15007(a), the Guidelines have recently been amended. Subpart (c) of Section 15007 provides: "If a document meets the content requirements in effect when the document is set out for public review, the document shall not need to be revised to conform to any new content requirements in guideline amendments taking effect before the document is finally approved." Pursuant to subpart (b) of Section 15007, "Amendments to the guidelines apply prospectively only. New requirements in amendments will apply to steps in the CEQA process not yet undertaken by the date when agencies must comply with the amendments." Pursuant to subpart (d) of Section 15007, public agencies must comply with guideline amendments beginning with the earlier of the following two dates: the effective date of the agency's procedures to conform to the new guideline amendments, or 120 days after the amended guidelines become effective.

considerable may rest on compliance with previously adopted plans or regulations, including ‘plans or regulations for the reduction of greenhouse gas emissions’]) (p. 26).

- **Compliance with GHG Reduction Plans or Climate Action Plans (CAPs).** A lead agency may utilize “geographically specific GHG emission reduction plans” such as climate action plans or greenhouse gas emission reduction plans to provide a basis for the tiering or streamlining of project-level CEQA analysis (p. 26).
- **Compliance with Local Air District Thresholds.** A lead agency may rely on “existing numerical thresholds of significance for greenhouse gas emissions” adopted by, for example, local air districts (p. 27).

Regional

BAAQMD has established GHG thresholds of significance for stationary sources and for projects other than stationary sources, as discussed in more detail later in the *Specific Thresholds of Significance*.

Local

Pittsburg General Plan

The City of Pittsburg adopted its General Plan in November of 2001. The *City of Pittsburg General Plan* establishes the following applicable objectives and policies that are relevant to GHG emissions:

Transportation Element

- **Policy 7-G-10:** Study the feasibility of a comprehensive network of on- and off-road bike routes to encourage the use of bikes for commute, recreational and other trips.
- **Policy 7-P-5:** Apply for federal Congestion Mitigation Air Quality grant funding designed to improve air quality through roadway improvement projects.
- **Policy 7-P-31:** Work with Tri-Delta and County Connection to schedule signal timing for arterials with heavy bus traffic, where air quality benefits can be demonstrated.

Resource Conservation Element

- **Policy 9-G-9:** Work toward improving air quality and meeting all Federal and State ambient air quality standards by reducing the generation of air pollutants from stationary and mobile sources.
- **Policy 9-G-11:** Reduce the number of motor vehicle trips and emissions accounted to Pittsburg residents and encourage land use and transportation strategies that promote use of alternatives to the automobile for transportation, including bicycling, bus transit, and carpooling.
- **Policy 9-P-29:** Cooperate with the Bay Area Air Quality Management District to achieve emissions reductions for ozone and its precursor, PM-10.
- **Policy 9-P-32:** Minimize emissions and air pollution from City operations by using alternative-fuel vehicles, as feasible.
- **Policy 9-P-43:** During redevelopment and rehabilitation of older residential units, ensure that the development process complies with the lead testing requirements established by Bay Area

Air Quality Management District, Contra Costa County Environmental Health District, and Housing and Urban Development.

City of Pittsburg Climate Action Plan and Climate Action Page

The City of Pittsburg is currently in the process of developing a Climate Action Plan (CAP), which will help develop solutions and outline City programs to reduce the City's carbon footprint. The City currently has a Climate Action Page that documents their efforts in promoting climate action. The categories of climate action identified include energy efficiency, renewable energy, fuel efficiency, resource conservation, and adaptation strategies.³⁴

3.3.4 - Impacts and Mitigation Measures

Significance Criteria

According to CEQA Guidelines Appendix G, to determine whether impacts related to greenhouse emissions are significant environmental effects, the following questions are analyzed and evaluated. Would the proposed project:

- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?
- c) Encourage activities that result in the use of large amounts of energy, or use of energy in a wasteful manner?
- d) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing energy use, particularly non-renewable energy use (often referred to as energy efficiency standards applicable to projects, buildings, appliances, etc.)?

Approach to Analysis

The 2004 Final EIR did not include any discussion of greenhouse gas emissions. Therefore, this analysis provides new information, in accordance with the 2019 CEQA guidelines. As noted previously, while the City is not required to do so, the City has chosen to utilize the 2019 CEQA Guidelines in an abundance of caution and to ensure full disclosure.

GHG Emissions Generation Calculation Methodology

The emission estimates were developed consistent with the proposed land uses and construction schedule in Chapter 2, Project Description. The CalEEMod version 2016.3.2 was used to estimate the 2018 Project's construction and operation-related GHG emissions. CalEEMod was developed in cooperation with air districts throughout the State and is designed as a uniform platform for

³⁴ City of Pittsburg. 2018. Climate Action Pages. Website: <http://www.ci.pittsburg.ca.us/index.aspx?page=301>. Accessed November 21, 2018.

government agencies, land use planners, and environmental professionals to quantify potential GHG emissions associated with construction and operation from a variety of land uses.

Construction

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction-related GHG emissions result from on-site and off-site activities. On-site GHG emissions principally consist of exhaust emissions from heavy-duty construction equipment. Off-site GHG emissions would occur from motor vehicle exhaust from material delivery vehicles and construction worker traffic. However, unlike air quality emissions that have both localized and regional impacts, GHG emissions are evaluated based on the total emissions generated. The construction parameters used to estimate the 2018 Project's construction-related GHG emissions were based on applicant-provided data and CalEEMod default-provided assumptions. Full assumptions are detailed in the CalEEMod modeling output contained in Appendix C.

Operation

The major sources and operational parameters used to estimate the 2018 Project's operation-related GHG emissions are summarized below. Full assumptions are detailed in the CalEEMod modeling output contained in Appendix C.

Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project site. The emissions were estimated using CalEEMod. The average daily trip generation rates for 2018 Project operations were obtained from the project-specific traffic study (included in Appendix F)³⁵ and are consistent with Institute of Transportation Engineers (ITE) Manual, 10th Edition.³⁶

Pass-by trips are made as intermediate stops on the way from an origin to a primary trip destination without a route diversion. Pass-by trips are attracted from traffic passing the vicinity of the project site on an adjacent street or roadway that offers direct access to the primary trip destination. Pass-by trips are not diverted from another roadway. As a mixed-use development consisting of residential and commercial land uses, the 2018 Project may generate pass-by trips from residents accessing the potential future commercial portion of the 2018 Project as an intermediate stop. Consistent with the 2018 Project-specific traffic study, pass-by trip credit for the commercial land uses was taken.

The CalEEMod default round trip lengths for an urban setting for Contra Costa County were used in this analysis. The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the proposed plan. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline and diesel-powered vehicles). The CalEEMod default vehicle fleet mix for Contra Costa County was used for this analysis.

³⁵ FirstCarbon Solutions (FCS). City of Pittsburg. Transportation Impact Assessment for Alves Ranch Project, prepared by Fehr & Peers. November 2018.

³⁶ Institute of Transportation Engineers (ITE). 2017. Trip Generation Manual 10th Edition.

Landscape Equipment

The use of landscaping equipment (leaf blowers, chain saws, mowers) would generate GHG emissions as a result of fuel combustion based on assumptions in the CalEEMod model.

Electricity

The City of Pittsburg's main electricity provider is Marin Clean Energy (MCE). Pacific Gas & Electric Company (PG&E) is the main electricity transmitter. CalEEMod does not include the option to use emission factors associated with MCE. As such, for the purpose of estimating GHG emissions for this analysis, emission factors from PG&E were used. PG&E provides estimates of its emission factor per megawatt hour of electricity delivered to its customers. PG&E emissions factor for 2020 for CO₂ is provided below. The rates for methane and nitrous oxide are based on compliance with the Renewable Portfolio Standard. The factors listed below were applied in estimating emissions for the year 2021.

- Carbon dioxide: 491.65 lb/MWh
- Methane: 0.022 lb/MWh
- Nitrous oxide: 0.005 lb/MWh

CalEEMod has three categories for electricity consumption: Title 24-electricity; non-Title 24-electricity; and lighting. Title 24-electricity uses are defined as the major building envelope systems covered by California Building Code Title 24 Part 6, such as space heating, space cooling, water heating, and ventilation. Lighting is separate since it can be both part and not part of Title 24. Since lighting is not part of the building envelope energy budget, CalEEMod does not consider lighting to have any further association with Title 24 references in the program. Non-Title 24-electricity includes everything else such as appliances and electronics. To properly divide the total electricity consumption into the three categories, the percentage for each category is determined by using percentages derived from the CalEEMod default electricity intensity. The percentages are applied to the electricity consumption to obtain the values used in the analysis.

Natural Gas

PG&E is assumed to be the main natural gas provider to the 2018 Project. There would be emissions from the combustion of natural gas used for the 2018 Project (water heaters, heat, etc.). CalEEMod has two categories for natural gas consumption: Title 24-natural gas, and non-Title 24-natural gas. For purposes of a conservative analysis, CalEEMod defaults were used.

Water and Wastewater

There would be emissions from the combustion of natural gas used for the 2018 Project (water heaters, heat, etc.). CalEEMod has two categories for natural gas consumption: Title 24 and non-Title 24. For purposes of a conservative analysis, CalEEMod defaults were used.

Solid Waste

GHG emissions would be generated from the decomposition of solid waste generated by the 2018 Project. For purposes of a conservative analysis, CalEEMod was used to estimate the GHG emissions from this source. The CalEEMod default for the mix of landfill types is as follows:

- Landfill no gas capture—6 percent;
- Landfill capture gas flare—94 percent;
- Landfill capture gas energy recovery—0 percent.

Vegetation

There is currently carbon sequestration occurring on-site from existing vegetation. The 2018 Project would plant trees and integrate landscaping into the proposed plan design, which would continue to provide carbon sequestration. However, while there is a conceptual landscape plan, the number of trees to be planted would be finalized as part of the ultimate site plan approval; therefore, because there is not definitive information regarding the final landscape plan, data are insufficient to accurately determine the impact that existing plants have on carbon sequestration. Accordingly, for purposes of a conservative analysis, it was assumed that the loss and addition of carbon sequestration that are due to the 2018 Project would be balanced; therefore, emissions due to carbon sequestration were not included.

GHG Emissions Reduction Plan Consistency Determination Methodology

In determining whether a project or plan conflicts with any applicable plan, policy, or regulation, the California Resources Agency has stated that in order to be used for the purpose of determining significance, an applicable plan, policy, or regulation must contain specific requirements that result in reductions of GHG emissions to a less than significant level. The City, in its discretion, has determined that the 2018 Project will be assessed for its consistency with the GHG reduction measures included in the AB 32 Scoping Plan and 2017 Scoping Plan Update for purposes of this GHG analysis.

Specific Thresholds of Significance

GHG Emissions Generation

BAAQMD provides multiple options in its *2017 CEQA Guidelines* for analysis of GHG emissions generated from operations. At the time of this analysis, BAAQMD has not yet provided a construction-related GHG generation threshold, but it does recommend that construction-generated GHGs be quantified and disclosed.

BAAQMD's project-level significance threshold for operational GHG generation was deemed appropriate by the City, in its discretion, to use when determining the 2018 Project's potential GHG impacts. The thresholds suggested by BAAQMD are as follows:

- Compliance with a qualified GHG Reduction Strategy;
- 1,100 MT CO₂e per year, or
- 4.6 MT CO₂e per service population (employees plus residents) per year (for 2020) or 2.6 MT CO₂e per service population (for 2030).

It should be noted that BAAQMD's thresholds of significance were established based on meeting the 2020 GHG targets set forth in the AB 32 Scoping Plan. For developments that would occur beyond 2020, the service population threshold of significance was adjusted to a "substantial progress" threshold that was calculated based on the SB 32 target of 40 percent below 1990 levels and the

forecasted 2030 service population.³⁷ In the *Center for Biological Diversity v. California Department of Fish and Wildlife*, the CA Supreme Court stated that “residential and commercial development, which are designed to accommodate longterm growth in California’s population and economic activity, this fact gives rise to an argument that a certain amount of greenhouse gas emissions is as inevitable as population growth. **Under this view, a significance criterion framed in terms of efficiency is superior to a simple numerical threshold because CEQA is not intended as a population control measure.**” (emph. added) Therefore, consistent with the BAAQMD guidelines and the CA Supreme Court decision, this analysis uses a service population threshold to evaluate GHG emissions for the 2018 Project.

The 2018 Project would be determined to conflict with any applicable GHG emissions reduction plan if it would not adhere to the GHG reduction measures included in the AB 32 Scoping Plan and SB Scoping Plan Update.

Impact Evaluation

GHG Emissions Generation

Impact GHG-1: Implementation of the 2018 Project would generate direct and indirect greenhouse gas emissions that could result in a significant impact on the environment.

Summary of 2004 Final EIR

The 2004 Final EIR did not include an analysis of GHG emissions.

Construction

Construction of the 2018 Project would emit GHG emissions from use of off-road equipment, worker vehicles, and any hauling that may occur. GHG emissions from project construction equipment and worker vehicles across all properties that make up the project site are shown in Table 3.3-4. The emissions are from all phases of construction. Construction of the 2018 Project is estimated to generate approximately 2,544 MT CO₂e over the entire construction duration.

BAAQMD does not presently provide a construction-related threshold for GHG emissions, but recommends that construction-generated GHG emissions be quantified and disclosed. BAAQMD also recommends that lead agencies make a determination of the level of significance of construction-generated GHG emissions in relation to meeting AB 32 GHG reduction goals. In the absence of a construction-specific significance threshold, this analysis amortizes the total construction emissions over the assumed lifetime of the 2018 Project (i.e., 30 years), and adds those emissions to the operational emissions. Since the 2018 Project includes both residential and commercial land uses, which can range from an estimated operational life of 25 to 40 years, the analysis uses 30 years as a representative lifetime consistent with recommendations of other air districts throughout California. See Table 3.3-5 for an evaluation summary of the 2018 Project’s annual construction GHG emission by construction phase. This amortization method is consistent

³⁷ Association of Environmental Professional (AEP). Final White Paper Beyond 2020 and Newhall: A Field Guide to New CEQA Greenhouse Gas Thresholds and Climate Action Plan Targets for California. Website: https://www.califaep.org/images/climate-change/AEP-2016_Final_White_Paper.pdf. Accessed: December 20, 2018.

with guidance from the Sacramento Metropolitan Air Quality Management District (SMAQMD's) guidance and provides quantitative analysis of the 2018 Project's construction emissions.³⁸ Since the analysis is based on a service population threshold and the BAAQMD guidelines do not specify how to including construction emissions in that impact assessment, this analysis uses recommendations consistent with other air districts in California to evaluate all emissions sources associated with the 2018 Project. As such, the 2018 Project would result in total amortized construction emissions of 85 MT CO₂e per year. The amortized construction emissions are added to the 2018 Project's annual operational emissions and then compared with the service population threshold, as shown in Table 3.3-5.

Table 3.3-4: Annual Construction GHG Emissions

Construction Phase	On-site Emissions	Off-site Emissions	Total Emissions (MT CO ₂ e/year)
Site Preparation—2019	52	2	54
Grading—2019	211	36	247
Building Construction—2019	56	204	260
Building Construction—2020	305	1,119	1,425
Building Construction—2021	71	255	326
Architectural Coating—2020	16	44	59
Architectural Coating—2021	33	88	115
Paving—2021	56	3	58
Total Construction Emissions			2,544
Amortized over 30 years			85
Note: MT CO ₂ e = metric tons of carbon dioxide equivalent Due to rounding, total MT CO ₂ e may be marginally different from CalEEMod output. Source: CalEEMod output (Appendix C).			

Operation

Operational emissions would occur at the project site over the life of the 2018 Project. The operational GHG emissions from the 2018 Project are combined with the amortized construction emissions and compared with BAAQMD's per-service-population threshold to make a significance determination.

The 2018 Project's operational emissions were estimated with CalEEMod version 2016.3.2. CalEEMod assumes compliance with some, but not all, applicable State-level rules and regulations regarding energy efficiency, vehicle fuel efficiency, renewable energy usage, and other GHG

³⁸ Sacramento Metropolitan Air Quality Management District (SMAQMD). 2009. CEQA Guide. Available: <http://www.airquality.org/LandUseTransportation/Documents/Ch6GHGFinal10-2016.pdf>.

reduction policies. The reductions obtained from each regulation and the source of the reduction amount used in this analysis are described below.

The following State regulations are incorporated into the CalEEMod emission factors:

- Pavley I motor vehicle emission standards
- Low Carbon Fuel Standard
- 2016 Title 24 Energy Efficiency Standards³⁹

The following State regulations have been manually incorporated in the CalEEMod inputs:

- Renewable Portfolio Standards
- Green Building Code Standards (indoor water use)
- CalRecycle Waste Diversion and Recycling Mandate (75 percent)

The California Model Water Efficient Landscape Ordinance (Outdoor Water) has not been incorporated into the CalEEMod emission factors and require alternative methods to account for emission reductions provided by the regulation.

CalEEMod generally treats these energy and water conservation and waste diversion measures as “mitigation measures,” even though they are required through regulation. For the purposes of this analysis, these measures would be considered under the “unmitigated” project conditions.

The service population is based on the anticipated amount of residents and employees that would be added to the population as a result of the 2018 Project. As discussed in the Population and Housing section of the 2018 Project’s Initial Study⁴⁰, using the City of Pittsburg’s average household size of 3.38 persons, the 2018 Project is expected to add approximately 1,204 persons to the population. Using a standard employment rate of one employee per 500 square feet of commercial space, the project is anticipated to result in approximately 280 employees. As such, the total service population is anticipated to be 1,484 persons.

As shown in Table 3.3-5, operation of the 2018 Project would generate approximately 8,215 MT CO₂e per year, after full buildout in 2021. Based on a projected service population of 1,484, the 2018 Project would generate approximately 5.5 MT CO₂e per service population at buildout (year 2021). For the projected year 2030, the 2018 Project would generate approximately 4.4 MT CO₂e per service population. Emissions in future years are reduced through an increase in the use of renewable sources of energy, turnover of older vehicles, introduction of cleaner fuels and implementation of more stringent emissions control technology.

³⁹ Even though the Project would be subject to the then-current Title 24 standards and requirements, for purposes of a conservative analysis, the 2016 standards were assumed.

⁴⁰ City of Pittsburg. 2018. 2018 Alves Ranch Project (prepared by FirstCarbon Solutions).

Table 3.3-5: Annual Operational GHG Emissions (Unmitigated)

Emission Source	Year 2021 Total Emissions (MT CO ₂ e per year)	Year 2030 Total Emissions (MT CO ₂ e per year)
Area	48	48
Energy	1,859	1,541
Mobile	6,042	4,665
Waste	94	94
Water	87	74
Amortized Construction Emissions	85	85
Total Project Emissions	8,215	6,507
Service Population (Residents + Employees)	1,484	1,484
2018 Project Emission Generation (MT CO ₂ e/SP)	5.5	4.4
BAAQMD Threshold (MT CO ₂ e/SP)	4.6	2.6*
Exceeds Threshold?	Yes	Yes
Notes: MT CO ₂ e = metric tons of carbon dioxide equivalent; SP = service population. Unrounded results used to calculate totals. * Adjusted threshold to account for 2017 Scoping Plan Update 40% Reduction Goal by 2030 Source of Emissions: CalEEMod Output (Appendix C) Source of Threshold: BAAQMD 2017		

As shown in Table 3.3-5, the 2018 Project would exceed BAAQMD's 2017 service population threshold of 4.6 MT CO₂e/service population/year for GHG emissions and the projected 2.6 MT CO₂e/service population/year for the projected 2030 GHG emissions. Therefore, the 2018 Project's operation would have the potential to generate significant GHG emissions that contribute to climate change.

Mitigation Measure GHG-1 is recommended to reduce GHG emissions to the extent feasible. Table 3.3-6 presents the mitigated annual operational GHG emissions.

Table 3.3-6: Annual Operational GHG Emissions (Mitigated)

Emission Source	Year 2021 Total Emissions (MT CO ₂ e per year)	Year 2030 Total Emissions (MT CO ₂ e per year)
Area	48	48
Energy	600	600
Mobile	6,042	4,665
Waste	94	94
Water	87	74

Table 3.3-6 (cont.): Annual Operational GHG Emissions (Mitigated)

Emission Source	Year 2021 Total Emissions (MT CO ₂ e per year)	Year 2030 Total Emissions (MT CO ₂ e per year)
Amortized Construction Emissions	85	85
Total Emissions with Implementation of Mitigation Measure GHG-1	6,956	5,565
Service Population (Residents + Employees)	1,484	1,484
Project Emission Generation (MT CO ₂ e/SP)	4.7	3.8
BAAQMD Threshold (MT CO ₂ e/SP)	4.6	2.6*
Exceeds Threshold?	Yes	Yes
Notes: MT CO ₂ e = metric tons of carbon dioxide equivalent; SP = service population. Unrounded results used to calculate totals. * Adjusted threshold to account for 2017 Scoping Plan Update 40% Reduction Goal by 2030 Source of Emissions: CalEEMod Output (Appendix C) Source of Threshold: BAAQMD 2017		

As shown in Table 3.3-6, annual operational GHG emissions for the year 2021 and 2030 would be reduced with implementation of Mitigation Measure GHG-1, but the 2018 Project would still exceed the applicable BAAQMD service population threshold with implementation of Mitigation Measure GHG-1. Therefore, impacts would remain significant and avoidable.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

The recommended mitigation measures listed below shall be implemented in addition to all project design features.

MM GHG-1 Implement Measures to Reduce GHG Emissions

Prior to the issuance of the first certificate of occupancy for the relevant portion of the 2018 Project (i.e., residential or commercial), or building final, as appropriate, the residential or commercial applicant (as relevant) shall provide documentation to the City of Pittsburg that the following measures have been achieved:

Residential Measures

- Provide 100 percent renewable energy through either one or a combination of (1) Installation of solar photovoltaic systems consistent with the 2019 Building Energy Efficiency Standards and/or (2) Purchase 100 percent renewable energy for

electricity consumption on the project site. For the purchase of renewable energy, prior to the issuance of the first certificate of occupancy for the residential portion of the 2018 Project, the Project applicant shall record Conditions, Covenants and Restrictions (CCRs) that require each homeowner to enroll into and maintain enrollment on an ongoing basis in the Marin Clean Energy’s “Deep Green” or “Local Sol” program, or similar program offered at the time of project occupancy, to purchase 100 percent renewable energy for electricity consumption on the project site.

- Provide electrical outlets on the outside of the homes or outlets within the garages to encourage the use of electrical landscaping equipment.
- Install on-demand electric or solar water heaters.
- Use water efficient landscapes and native/drought-tolerant vegetation.
- Install smart meters and programmable thermostats.

Commercial Measures

- Install on-site charging units for electric vehicles consistent with parking requirements in California Green Building Standards Code Section 5.106.5.2.
- Dedicate on-site parking for shared vehicles.
- Install on demand electric water heating instead of natural gas water heating for some or all of the project’s hot water needs, to the extent such technology is then readily available and commercially practicable.
- Provide adequate, safe, convenient, and secure on-site bicycle parking and storage in the commercial portion of the project.

Level of Significance After Mitigation

Significant and unavoidable.

GHG Emissions Reduction Plan Consistency

Impact GHG-2: **Implementation of the 2018 Project would not conflict with the applicable plan, policy, or regulation of an agency adopted to reduce the emissions of greenhouse gases.**

Summary of 2004 Final EIR

The 2004 Final EIR did not include an analysis of consistency with the applicable plan, policy, or regulation of an agency adopted to reduce GHG emissions.

The City of Pittsburg is currently in the process of developing a CAP, but has not finalized it. As such, the 2018 Project will be qualitatively assessed to determine whether it would be consistent with the Scoping Plan and Scoping Plan Update. Projects that are inconsistent or that conflict with the applicable plans would result in a significant project and cumulative impact unless mitigation was available to eliminate the inconsistency or conflict.

Scoping Plan

The Scoping Plan provides the State’s overall GHG emissions reduction strategy and is on track to exceed its goal of reducing GHG emissions to 1990 levels by 2020. The State has adopted regulations described earlier in this section to implement the Scoping Plan measures and to achieve the emission reductions required. The majority of the Scoping Plan reduction measures apply at the state level and would not require specific actions at the lead agency level or project level. However, these measures, when implemented with regulations, may indirectly affect local government operations and development projects. Table 3.3-7 provides an analysis of the 2018 Project’s consistency with the Scoping Plan measures. As shown, the 2018 Project is consistent with all applicable measures and would not conflict with the Scoping Plan.

Table 3.3-7: Consistency with Scoping Plan Reduction Measures

Scoping Plan Reduction Measure	Project Consistency
<p>1. California Cap-and-Trade Program Linked to Western Climate Initiative. Implement a broad-based California Cap-and-Trade program to provide a firm limit on emissions. Link the California cap-and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California. Ensure California’s program meets all applicable AB 32 requirements for market-based mechanisms.</p>	<p>Not applicable. This is a Statewide measure that cannot be implemented by the 2018 Project applicant or lead agency. The existing Cap-and-Trade program would apply to sources that generate more than 25,000 MT CO₂e/year.</p>
<p>2. California Light-Duty Vehicle Greenhouse Gas Standards. Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel and vehicle technology programs with long-term climate change goals.</p>	<p>Not applicable. This is a Statewide measure that cannot be implemented by the 2018 Project applicant or lead agency. However, vehicles accessing the residences and businesses at the project site would be subject to the standards. Furthermore, per Mitigation Measure GHG-1, the 2018 Project would implement transportation-related measures that would further reduce VMT and transportation-related GHG emissions.</p>
<p>3. Energy Efficiency. Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.</p>	<p>Consistent. This is a measure for the State to adopt increasingly stringent energy efficiency standards. However, the 2018 Project would comply with the latest Title 24 energy efficiency standards. Furthermore, per Mitigation Measure GHG-1, the 2018 Project would implement energy-related measures that would further reduce energy-related GHG emissions.</p>
<p>4. Renewable Portfolio Standard. Achieve 33 percent renewable energy mix Statewide. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.</p>	<p>Not applicable. This is a Statewide measure that cannot be implemented by the 2018 Project applicant or lead agency. Specifically, electricity would be supplied to project by Marin Clean Energy, which already meets or exceeds the proposed renewable standards.</p>

Table 3.3-7 (cont.): Consistency with Scoping Plan Reduction Measures

Scoping Plan Reduction Measure	Project Consistency
5. Low Carbon Fuel Standard. Develop and adopt the Low Carbon Fuel Standard.	Not applicable. This is a Statewide measure that cannot be implemented by the 2018 Project applicant or lead agency. However, the standard is applicable to the fuel used by vehicles that would access the project site.
6. Regional Transportation-Related Greenhouse Gas Targets. Develop regional greenhouse gas emissions reduction targets for passenger vehicles. This measure refers to SB 375.	Not applicable. The 2018 Project, which would be constructed on an urban infill site, would be providing residences and jobs in close proximity to public transit to support growth in the region that is consistent with the 2016 Regional Transportation Plan/Sustainable Communities Strategy (SCS).
7. Vehicle Efficiency Measures. Implement light-duty vehicle efficiency measures.	Not applicable. This is a Statewide measure that cannot be implemented by the 2018 Project applicant or lead agency. However, the standards would be applicable to the light-duty vehicles that would access the project site.
8. Goods Movement. Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.	Not applicable. The 2018 Project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
9. Million Solar Roofs Program. Install 3,000 MW of solar-electric capacity under California’s existing solar programs.	Consistent. This measure is to increase solar throughout California, which is being done by various electricity providers and existing solar programs. Projects within the plan area will be able to take advantage of incentives that are in place at the time of construction. Pursuant to the 2019 Building Energy Efficiency Standards and Mitigation Measure GHG-1, the project would include the installation of solar photovoltaic systems for the residential portion of the project site. Furthermore, the commercial building roofs will be constructed to be “solar-ready.”
10. Medium/Heavy-Duty Vehicles. Adopt medium and heavy-duty vehicle efficiency measures.	Not applicable. This is a Statewide measure that cannot be implemented by the 2018 Project applicant or lead agency. The standards would be applicable to the vehicles that access the project site.

As shown on Table 3.3-7, the 2018 Project is consistent with all applicable measures and would not conflict with the Scoping Plan.

Scoping Plan Update

The 2017 *Climate Change Scoping Plan Update* builds upon the Scoping Plan by extending or expanding upon existing Scoping Plan measures. Table 3.3-8 provides an analysis of the 2018 Project’s consistency with the Scoping Plan Update measures.

Table 3.3-8: Consistency with 2017 Scoping Plan Update Scenario Policies

Scoping Plan Scenario Policy	Project Consistency
<p>1. SB 350. Reduce GHG emissions in the electricity sector through the implementation of the 50 percent RPS, doubling of energy savings, and other actions as appropriate to achieve GHG emissions reductions planning targets in the Integrated Resource Plan (IRP) process.</p>	<p>Not applicable. This is a measure for the State to adopt increasingly stringent energy efficiency standards. However, the project will comply with the latest Title 24 energy efficiency standards. Furthermore, per Mitigation Measure GHG-1, the 2018 Project would implement energy-related measures that would further reduce energy-related GHG emissions.</p>
<p>2. Low Carbon Fuel Standard (LCFS). Transition to cleaner/less-polluting fuels that have a lower carbon footprint.</p>	<p>Not applicable. This is a Statewide measure that cannot be implemented by the 2018 Project applicant or lead agency. However, the standard is applicable to the fuel used by vehicles that would access the project site.</p>
<p>3. Mobile Source Strategy (Cleaner Technology and Fuels [CTF] Scenario). Reduce GHGs and other pollutants from the transportation sector through transition to zero-emission and low-emission vehicles, cleaner transit systems and reduction of vehicle miles traveled.</p>	<p>Not applicable. This is a Statewide measure that cannot be implemented by the 2018 Project applicant or lead agency. However, vehicles accessing the residences and businesses at the project site would be subject to the standards. Furthermore, per Mitigation Measure GHG-1, the 2018 Project may implement transportation-related measures that would further reduce VMT and transportation-related GHG emissions.</p>
<p>4. SB 1383. Approve and Implement Short-Lived Climate Pollutant strategy to reduce highly potent GHGs</p>	<p>Not applicable. This is a Statewide measure that cannot be implemented by the 2018 Project applicant or lead agency.</p>
<p>5. California Sustainable Freight Action Plan. Improve freight efficiency, transition to zero emission technologies, and increase competitiveness of California’s freight system.</p>	<p>Not applicable. This is a Statewide measure that cannot be implemented by the 2018 Project applicant or lead agency. The 2018 Project does not propose any freight developments.</p>
<p>6. Post-2020 Cap-and-Trade Program. Reduce GHGs across largest GHG emissions sources</p>	<p>Not applicable. This is a statewide measure that cannot be implemented by the 2018 Project applicant or lead agency. Furthermore, the Cap-and-Trade program would apply to sources that generate more than 25,000 MT CO₂e/year.</p>

As shown in Table 3.3-8, the 2018 Project would not conflict with the Scoping Plan Scenario Policies set forth in the 2017 Climate Change Scoping Plan Update.

Summary

The 2018 Project would not conflict with the AB 32 Scoping Plan, SB 32 Scoping Plan Update, or any applicable regulations adopted by the State of California to reduce GHG emissions. In addition, the 2018 Project would comply with all mandatory local and regional measures applicable to the project. As

such, the 2018 Project would not substantially conflict with existing California legislation adopted to reduce statewide GHG emissions. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

3.4 - Noise

3.4.1 - Introduction

This section describes existing conditions related to noise on the project site and vicinity as well as the regulatory framework. This section evaluates the potential changes in the project, changes in circumstances, or new information related to noise that could result from implementation of the 2018 Project, as compared to those impacts evaluated in the 2004 Final Environmental Impact Report (EIR), and determines whether additional analysis is necessary to ensure the 2004 Final EIR is adequate for purposes of evaluating the 2018 Project. Project-specific noise monitoring and noise modeling data is provided in Appendix E.

As explained more fully in this noise section, the 2004 Final EIR concluded that implementation of the original Alves Ranch Project would result in significant impacts related to compatibility of the project with the ambient noise environment (especially related to mobile noise sources). The 2004 Final EIR included mitigation that required the completion of a site specific acoustical analysis to identify site design measures and potential sound barrier locations to ensure the project's consistency with applicable state and local land use compatibility guidelines and other applicable noise performance standards in order to ensure that project-related mobile source, stationary source, and construction-related noise source impacts would be reduced to less than significant. However, the 2004 Final EIR concluded that even with implementation of feasible mitigation, construction noise would remain a significant and unavoidable impact, due to the anticipated lengthy (6–15 year) construction period.

The acoustical analysis contained in this Draft Supplemental EIR satisfies the site-specific acoustic analysis requirements of Mitigation Measure 14-1a of the 2004 Final EIR, and provides an evaluation of whether the 2018 Project would have new significant impacts or result in an increase in severity in any of the previously identified impacts as compared to the impacts disclosed in the 2004 Final EIR. In addition, this noise section includes updated environmental setting information to characterize any relevant changes to the ambient noise environment as compared to the setting evaluated in the 2004 Final EIR, and includes additional analysis and refinements to mitigation measures, where needed, to ensure that the analysis provided by the 2004 Final EIR, as revised herein, is adequate to evaluate the 2018 Project as currently proposed.

Potential impacts related to groundborne vibration and airport activity with respect to the 2018 Project were analyzed in the Initial Study attached to the Notice of Preparation (NOP) for this Draft Supplemental EIR, which was distributed and filed on December 18, 2018, and were determined to be less than significant. Therefore, impacts related to groundborne vibration and airport activity are not required to be evaluated further and therefore are not included in this section of the Draft Supplemental EIR.

3.4.2 - Environmental Setting

Characteristics of Noise

Noise is generally defined as unwanted or objectionable sound. Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in the extreme, hearing impairment. Noise effects can be caused by pitch or loudness. Pitch is the number of complete vibrations or cycles per second of a wave that result in the range of tone from high to low; higher-pitched sounds are louder to humans than lower-pitched sounds. Loudness is the intensity or amplitude of sound.

Sound is produced by the vibration of sound pressure waves in the air. Sound pressure levels are used to measure the intensity of sound and are described in terms of decibels. The decibel (dB) is a logarithmic unit, which expresses the ratio of the sound pressure level being measured to a standard reference level. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of more than 3 dB, as this level has been found to be barely perceptible to the human ear in outdoor environments. Only audible changes in existing ambient or background noise levels are considered potentially significant.

The human ear is not equally sensitive to all frequencies within the audible sound spectrum, so sound pressure level measurements can be weighted to better represent frequency-based sensitivity of average healthy human hearing. One such specific “filtering” of sound is called “A-weighting.” A-weighted decibels (dBA) approximate the subjective response of the human ear to a broad frequency noise source by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies that are audible to the human ear. Because decibels are logarithmic units, they cannot be added or subtracted by ordinary arithmetic means. For example, if one noise source produces a noise level of 70 dB, the addition of another noise source with the same noise level would not produce 140 dB; rather, they would combine to produce a noise level of 73 dB.

Noise Descriptors

There are many ways to rate noise for various times, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and community noise equivalent level (CNEL) or the day-night average level (L_{dn}) based on dBA. CNEL is the time-varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the evening hours. CNEL and L_{dn} are within one dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

Other noise rating scales of importance when assessing the annoyance factor include the maximum noise level (L_{max}), which is the highest exponential time-averaged sound level that occurs during a stated time. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Noise Propagation

From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source, as well as ground absorption, atmospheric conditions (wind, temperature gradients, and humidity) and refraction, and shielding by natural and manmade features. Sound from point sources, such as an air conditioning condenser, a piece of construction equipment, or an idling truck, radiates uniformly outward as it travels away from the source in a spherical pattern.

The attenuation or sound drop-off rate is dependent on the conditions of the land between the noise source and receiver. To account for this ground-effect attenuation (absorption), two types of site conditions are commonly used in noise models: soft-site and hard-site conditions. Soft-site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. For point sources, a drop-off rate of 7.5 dBA per each doubling of the distance (dBA/DD) is typically observed over soft ground with landscaping, as compared with a 6 dBA/DD drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. For line sources, such as traffic noise on a roadway, a 4.5 dBA/DD is typically observed for soft-site conditions compared to the 3 dBA/DD drop-off rate for hard-site conditions. Table 3.4-1 briefly defines these measurement descriptors and other sound terminology used in this section.

Table 3.4-1: Sound Terminology

Term	Definition
Sound	A vibratory disturbance created by a vibrating object which, when transmitted by pressure waves through a medium such as air, can be detected by a receiving mechanism such as the human ear or a microphone.
Noise	Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
Ambient Noise	The composite of noise from all sources near and far in a given environment.
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which represents the squared ratio of sound-pressure amplitude to a reference sound pressure. The reference pressure is 20 micropascals, representing the threshold of human hearing (0 dB).
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level that approximates the frequency response of the human ear.

Table 3.4-1 (cont.): Sound Terminology

Term	Definition
Equivalent Noise Level (L_{eq})	The average sound energy occurring over a specified time period. In effect, L_{eq} is the steady-state sound level that in a stated period would contain the same acoustical energy as the time-varying sound that actually occurs during the same period.
Maximum and Minimum Noise Levels (L_{max} and L_{min})	The maximum or minimum instantaneous sound level measured during a measurement period.
Day-Night Level (DNL or L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m. (nighttime).
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the A-weighted sound levels occurring between 7 p.m. and 10 p.m. and 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m.
Source: Data compiled by FCS, 2018	

Traffic Noise

The level of traffic noise depends on the three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the number of trucks in the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater number of trucks. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires. Because of the logarithmic nature of noise levels, a doubling of the traffic volume (assuming that the speed and truck mix do not change) results in a noise level increase of 3 dBA. Based on the Federal Highway Administration (FHWA) community noise assessment criteria, this 3 dBA change is “barely perceptible”; for reference, a doubling of perceived noise levels would require an increase of approximately 10 dBA. The truck mix on a given roadway also has an effect on community noise levels. As the number of heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise levels increase.

Stationary Noise

A stationary noise producer is any entity in a fixed location that emits noise. Examples of stationary noise sources include machinery, engines, energy production, and other mechanical or powered equipment and activities such as loading and unloading or public assembly that may occur at commercial, industrial, manufacturing, or institutional facilities. Furthermore, while noise generated by the use of motor vehicles over public roads is preempted from local regulation, although the use of these vehicles is considered a stationary noise source when operated on private property such as at a construction site, a truck terminal, or warehousing facility. The emitted noise from the producer can be mitigated to acceptable levels either at the source or on the adjacent property through the

use of proper planning, setbacks, block walls, acoustic-rated windows, dense landscaping, or by changing the location of the noise producer.

The effects of stationary noise depend on factors such as characteristics of the equipment and operations, distance and pathway between the generator and receptor, and weather. Stationary noise sources may be regulated at the point of manufacture (e.g., equipment or engines), with limitations on the hours of operation, or with provision of intervening structures, barriers or topography.

Construction activities are a common source of stationary noise. Construction-period noise levels are higher than background ambient noise levels but eventually cease once construction is complete. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on each construction site and, therefore, would change the noise levels as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction related noise ranges to be categorized by work phase. Table 3.4-2 shows typical noise levels of construction equipment as measured at a distance of 50 feet from the operating equipment.

Table 3.4-2: Typical Construction Equipment Maximum Noise Levels, L_{max}

Type of Equipment	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Pickup Truck	55
Pumps	77
Air Compressors	80
Backhoe	80
Front-End Loaders	80
Portable Generators	82
Dump Truck	84
Tractors	84
Auger Drill Rig	85
Concrete Mixer Truck	85
Cranes	85
Dozers	85
Excavators	85
Graders	85
Jackhammers	85
Man Lift	85
Paver	85
Pneumatic Tools	85
Rollers	85

Table 3.4-2 (cont.): Typical Construction Equipment Maximum Noise Levels, L_{max}

Type of Equipment	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Scrapers	85
Concrete/Industrial Saws	90
Impact Pile Driver	95
Vibratory Pile Driver	95
Source: FHWA 2006.	

Noise from Multiple Sources

Because sound pressure levels in decibels are based on a logarithmic scale, they cannot be added or subtracted in the usual arithmetical way. Therefore, sound pressure levels in decibels are logarithmically added on an energy summation basis. In other words, adding a new noise source to an existing noise source, both producing noise at the same level, will not double the noise level. Instead, if the difference between two noise sources is 10 dBA or more, the louder noise source will dominate and the resultant noise level will be equal to the noise level of the louder source. In general, if the difference between two noise sources is 0–1 dBA, the resultant noise level will be 3 dBA higher than the louder noise source, or both sources if they are equal. If the difference between two noise sources is 2–3 dBA, the resultant noise level will be 2 dBA above the louder noise source. If the difference between two noise sources is 4–10 dBA, the resultant noise level will be 1 dBA higher than the louder noise source.

Existing Noise Levels

The 2004 Final EIR characterized sound levels at the time the 2004 Final EIR was prepared. As required in Public Resources Code Section 21166, in order to evaluate any incremental differences in the impacts evaluated in the 2004 Final EIR and those that may result from the 2018 Project analyzed in this Draft Supplemental EIR, additional sound level measurements and additional traffic noise modeling were conducted to characterize current conditions.

Ambient Noise

To understand the current ambient noise environment in the vicinity of the project site, four noise measurements were taken in October 2018 on the project site, as discussed below. The existing noise measurement locations were taken in compliance with the methodology and site selection acoustical equivalence guidance of the California Department of Transportation (Caltrans) Technical Noise Supplement.¹ These measurements provide a baseline of existing noise conditions for purposes of this Draft Supplemental EIR. Three short-term and one long-term existing noise measurements were taken. The results of these measurements are described below.

¹ Caltrans. 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. September.

Short-Term Noise Measurements

Short-term noise monitoring was conducted on Monday, October 8, 2018, between 3:00 p.m. and 4:07 p.m. The noise measurements were taken during these midday hours, as they typically have the highest daytime noise levels in urban environments because traffic is generally at peak capacity for free flowing traffic during these time periods. The time frame for peak daytime noise levels is therefore typically different from peak traffic volume hours, because traffic noise is greater when it is free flowing. While traffic volumes may be higher at other times, because the traffic is often not free flowing during peak traffic hours, the resulting traffic noise levels are actually lower than the midday peak noise hour. At the start of the noise monitoring, the sky was clear, and average wind velocity measured 3.2 miles per hour. The field survey noted that noise within the project site is generally characterized by car traffic and Bay Area Rapid Transit (BART) train passings. The short-term noise measurement results are summarized in Table 3.4-3. The noise measurement locations are shown in Exhibit 3.4-1.

Table 3.4-3: Existing Ambient Noise Levels At and Adjacent to the Project Site (Short Term Measurements)

Site ID #	Description	L _{eq}	L _{min}	L _{max}
ST-1	Approximately 35 feet north from the center of the roadway junction connecting Palacio Drive to Roma Drive, on the sidewalk.	62	58	65
ST-2	Approximately 90 feet southwest from the center of West Leland Road and Tomales Bay Drive, on the sidewalk.	69	51	87
ST-3	Approximately 100 feet southeast from the center of West Leland Road and Alves Ranch Road, on the sidewalk.	67	49	88

Notes:
 The Site ID corresponds to the locations shown in Exhibit 3.4-1.
 For ease of reference, existing noise levels are rounded to the nearest tenth.
 Source: FirstCarbon Solutions, 2018

Long-Term Noise Measurement

A long-term ambient noise measurement was conducted from 2:45 p.m. on Monday, October 8, 2018, to 3:19 p.m. on Wednesday, October 10, 2018. The long-term measurement was taken on the project site, approximately 80 feet south of the outermost lane of State Route 4 (SR-4) and approximately 110 feet east of the site’s western boundary. This location was selected to document the existing traffic on SR-4 and BART rail activity noise levels at the point of the project site closest to these noise sources. The long-term noise measurement location is shown in Exhibit 3.4-1, and the long-term noise measurement data results are provided in Appendix E. The results show that weekday 24-hour average day/night noise levels at this location averaged 78 dBA L_{dn}. The documented daytime hourly average noise levels were 73 dBA L_{eq}, with evening and nighttime hourly average noise levels of 67 dBA and 72 dBA L_{eq}, respectively. The midday peak noise hours registered noise levels ranging up to 74 dBA L_{eq}. When the long-term noise measurement was started, the sky was clear, and the temperature was 83.4 degrees Fahrenheit, with average wind speeds of 3.2 miles per hour. This noise measurement captured noise levels from all noise sources in this location. As was noted by the field technician, the

dominant noise source at this location was traffic on SR-4, with noise from BART rail activity being the next loudest single noise source at this location.

Traffic Noise

In addition to the ambient noise measurements, existing traffic noise on local roadways in the areas surrounding the project site was calculated to quantify existing traffic noise levels, based on the existing traffic volumes provided in the traffic study included in Appendix F. This additional assessment and data collection were conducted, in part, to ensure that any relevant changes in the circumstances surrounding the project that was originally studied in the 2004 Final EIR are properly considered in this Draft Supplemental EIR. Existing traffic noise levels along selected roadway segments in the vicinity of the project site were modeled using the FHWA Traffic Noise Prediction Model (FHWA-RD-77-108). Site-specific information was entered, such as roadway traffic volumes, roadway active width, source-to-receiver distances, travel speed, noise source and receiver heights, and the percentages of automobiles, medium trucks, and heavy trucks that the traffic is made up of throughout the day, amongst other variables. The modeled average daily traffic (ADT) volumes were obtained by multiplying the existing PM peak-hour intersection traffic volumes by a factor of 10. The existing noise model inputs and outputs, including the 60 dBA, 65 dBA, and 70 dBA L_{dn} traffic noise contour distances, are provided in Appendix E. A summary of the modeling results is shown in Table 3.4-4.

Table 3.4-4: Existing Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 L_{dn} (feet)	Centerline to 65 L_{dn} (feet)	Centerline to 60 L_{dn} (feet)	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane
West Leland Road—San Marcos Boulevard to Tomales Bay Drive	13,300	< 50	93	195	66.6
West Leland Road—Tomales Bay Drive to Alves Ranch Road	10,300	< 50	79	165	65.5
West Leland Road—Alves Ranch Road to Woodhill Drive	10,500	< 50	80	167	65.6
West Leland Road—Woodhill Drive to Southwood Drive	9,700	< 50	< 50	106	62.6
West Leland Road—Southwood Drive to BART Exit	10,400	< 50	56	111	62.9
West Leland Road—BART Exit to BART Entrance	10,900	< 50	57	115	63.1
West Leland Road—BART Entrance to Oak Hills Drive	10,900	< 50	57	115	63.1
West Leland Road—Oak Hills Drive to Bailey Road	13,000	< 50	63	128	63.8
Note: ADT = Average Daily Traffic Source: FirstCarbon Solutions 2018.					



Source: ESRI Aerial Imagery.



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The modeling results indicate that existing traffic noise levels range from 62.6 dBA L_{dn} (along West Leland Road—Woodhill Drive to Southwood Drive) up to approximately 66.6 dBA L_{dn} along West Leland Road between San Marcos Boulevard and Tomales Bay Drive.

As is noted under the long-term ambient noise level measurement above, combined traffic and BART rail activity noise levels at the project site's northern boundary range up to 78.2 dBA L_{dn} .

Noise-Sensitive Land Uses

Noise-sensitive land uses, generally, include those uses where exposure to noise would result in adverse effects, as well as uses for which quiet is an essential element of their intended purpose. Residential dwellings are of primary concern, because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other noise-sensitive land uses include hospitals, convalescent facilities, hotels, churches, libraries, and other uses where low noise levels are essential.

Noise sensitive land uses in the project vicinity include the Vista Del Mar Subdivision to the south of the project site, and the San Marco development, containing residential developments of varying densities, to the west of the project site.

3.4.3 - Regulatory Framework

Federal

Noise Control Act

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce
- Assisting State and local abatement efforts
- Promoting noise education and research

The Federal Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees.

Among the agencies now regulating noise are the Occupational Safety and Health Administration (OSHA), which limits noise exposure of workers to 90 dB L_{eq} or less for 8 continuous hours or 105 dB L_{eq} or less for 1 continuous hour; the Department of Transportation (DOT), which assumed a significant role in noise control through its various operating agencies; and the Federal Aviation Administration (FAA), which regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the FTA. Transit noise is regulated by the federal Urban Mass Transit Administration, while freeways that are part of the interstate highway system are regulated by the FHWA. Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being sited adjacent to a highway, or alternatively, that developments are planned and constructed in such a manner that minimize potential noise impacts.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by transportation sources, local jurisdictions are limited to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

State

California General Plan Guidelines

Established in 1973, the California Department of Health Services Office of Noise Control was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the “Land Use Compatibility for Community Noise Environments Matrix,” which allows the local jurisdiction to delineate compatibility of sensitive uses with various incremental levels of noise.

Government Code Section 65302 mandates that the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise/land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable. The 2018 Project is also subject to review under the California Environmental Quality Act (CEQA). Appendix G of the CEQA Guidelines provides impact thresholds for potential noise and vibration impacts.

California Building Standards Code

The State of California has established noise insulation standards for new hotels, motels, apartment houses, and dwellings (other than single-family detached housing). These requirements are provided in the 2016 California Building Standards Code (CBC) (California Code of Regulations [CCR], Title 24).² As provided in the CBC, the noise insulation standards set forth an interior standard of 45 dBA CNEL as measured from within the structure’s interior. When such structures are located within a 65-dBA CNEL (or greater) exterior noise contour associated with a traffic noise along a roadway, an acoustical analysis is required to ensure that interior levels do not exceed the 45-dBA CNEL threshold. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

Local Regulations

The project site is located within the City of Pittsburg, in the County of Contra Costa. The City of Pittsburg addresses noise in the Noise Element of its General Plan and in its Municipal Code.

General Plan Pittsburg 2020: A Vision for the 21st Century

The City of Pittsburg adopted its amended General Plan Pittsburg 2020: A Vision for the 21st Century in November of 2001.³ The objectives of the General Plan’s Noise Element are to protect public health and welfare by eliminating or minimizing the effects of existing noise problems, and by preventing increased noise levels in the future. To assist with meeting its objectives, the City’s General Plan has adopted the State of California’s Land Use Compatibility Guidelines for Community Noise Environments and has established a policy for acceptable interior noise levels at noise

² California Building Standards Commission. 2017. California Building Standards Code (CCR Title 24), January 1.

³ City of Pittsburg. 2001. General Plan Pittsburg 2020. November.

sensitive land uses. These guidelines are used to determine the compatibility of new land use developments with various ambient noise environments; however, they are not meant to be used as noise performance standards that limit operational noise levels of an existing or proposed land use. These land use compatibility guidelines are summarized below.

The land use categories listed in Figure 12-3 (shown in Exhibit 3.4-2) of the City's Noise Element that most closely apply to the 2018 Project are Residential—Single-Family, Mobile Homes and Office Buildings, Business Commercial and Professional:

- The “Residential—Single-Family,” designation identifies noise environments with ambient noise levels of up to 60 dBA L_{dn} as “normally acceptable,” while noise environments with ambient noise levels ranging from 55 dBA to 70 dBA L_{dn} are considered “conditionally acceptable.” Noise environments with ambient noise levels in excess of 70 dBA L_{dn} are considered unacceptable for this type of new land use development.
- The Office Buildings, Business Commercial and Professional designation identifies noise environments with ambient noise levels of up to 70 dBA L_{dn} as “normally acceptable,” while noise environments with ambient noise levels ranging from 67.5 dBA to 77.5 dBA L_{dn} are considered “conditionally acceptable” for this type of new land use development. Noise environments with ambient noise levels in excess of 75 dBA L_{dn} are considered unacceptable for this type of new land use development.

The following General Plan noise policies are applicable to the 2018 Project:

- **12-P-1:** As part of development review, use Figure 12-3 (see Exhibit 3.4-2 of this document) to determine acceptable uses and installation requirements in noise-impacted areas.
Figure 12-3 is based on land use and noise exposure compatibility levels in Appendix A of the State of California General Plan Guidelines. The table is consistent with the provision of State law that requires special noise insulation for new multi-family housing units within 60 dB L_{dn} noise exposure contours. The table's land use categories do not correspond to the land use classifications on the General Plan Land Use Diagram, but to actual uses in development projects.
- **12-P-2:** Work with Caltrans to provide soundwalls designed to reduce noise by 10 dBA in residential areas along SR-4.
- **12-P-5:** Require that applicants for new noise-sensitive development, such as schools, residences, and hospitals, in areas subject to noise generators producing noise levels greater than 65 dBA CNEL,⁴ obtain the services of a professional acoustical engineer to provide a technical analysis and design of mitigation measures.
- **12-P-6:** Ensure that new noise-sensitive uses, including schools, hospitals, churches, and homes, in areas near roadways identified as impacting sensitive receptors by producing noise levels greater than 65 dBA CNEL (Figure 12-1), incorporate mitigation measures to ensure that interior noise levels do not exceed 45 dBA CNEL.
- **12-P-9:** Limit generation of loud noises on construction sites adjacent to existing development to normal business hours between 8:00 a.m. and 5:00 p.m.

⁴ It should be noted that the General Plan policies use both CNEL and L_{dn} noise metric. For purposes of this analysis, in keeping with the metric used in the City's land use compatibility standards table, the L_{dn} metric is used.

City of Pittsburg Municipal Code

The City of Pittsburg has established noise performance standards and permissible hours for construction activities in its Municipal Code. These provisions are summarized below:

Noise (Section 9.44.010)

The operation of pile drivers, hammers, and similar equipment is prohibited between the hours of 10:00 p.m. and 7:00 a.m. (In addition to these specific requirements set forth in the City's Municipal Code, development projects, including the 2018 Project, are required to meet the more restrictive standard stated above in Policy 12-P-9 of the Noise Element in the City's General Plan, which limits all loud noise-generating construction activities to between 8:00 a.m. and 5:00 p.m.)

Performance Standards for All Uses (Section 18.82.040)

Activities such as deliveries and equipment idling occurring between 5:00 p.m. and 8:00 a.m. on the properties (such as the project site) that are adjacent to a residential lot must be limited to 65 dBA as measured at the property line.

3.4.4 - Impacts and Mitigation Measures

Significance Criteria

As further explained in Section 1 of this Draft Supplemental EIR, CEQA includes a presumption against requiring any further environmental review once an EIR has been prepared and certified for a project, and does not generally require an analysis of revisions made to laws or regulations after certification of the EIR. Furthermore, this Draft Supplemental EIR meets the content requirements for purposes of CEQA in effect when it was set out for public review. Nevertheless, for purposes of a conservative analysis, the City of Pittsburg recognizes that the California Code of Regulations⁵ were recently amended. Therefore, in the City's discretion as the lead agency, in an abundance of caution and to ensure full disclosure, this Draft Supplemental EIR includes consideration of impacts utilizing the 2019 CEQA Guidelines Appendix G. As such, the following questions are analyzed and evaluated to determine whether impacts related to noise are significant in the context of this Draft Supplemental EIR.

It should be noted that the significance criteria question (a), below, is from the Land Use and Planning section of the CEQA Guidelines Appendix G checklist questions. However, this question addresses impacts related to conflicts with land use plans, which would include project-related conflicts to the noise land use compatibility standards of the Noise Element of the General Plan. Therefore, impacts associated with this impact are addressed in this noise impact analysis.

⁵ Pursuant to CEQA Guidelines Section 15007(a), the Guidelines have recently been amended. Subpart (c) of Section 15007 provides: "If a document meets the content requirements in effect when the document is set out for public review, the document shall not need to be revised to conform to any new content requirements in guideline amendments taking effect before the document is finally approved." Pursuant to subpart (b) of Section 15007, "Amendments to the guidelines apply prospectively only. New requirements in amendments will apply to steps in the CEQA process not yet undertaken by the date when agencies must comply with the amendments." Pursuant to subpart (d) of Section 15007, public agencies must comply with Guideline amendments beginning with the earlier of the following two dates: the effective date of the agency's procedures to conform to the new Guideline amendments, or 120 days after the amended Guidelines become effective.

Land Use Category	Exterior Day/Night Noise Levels DNL or Ldn , dB						INTERPRETATION
	55	60	65	70	75	80	
Residential– Single Family							Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements
Residential– Multiple Family							
Transient Lodging– Motels, Hotels							Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.
Schools, Libraries, Churches, Hospitals*, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Sports Arena, Outdoor Spectator Sports							
Playgrounds, Parks							Clearly Unacceptable: New construction or development clearly should not be undertaken.
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing,							

Source: Office of Planning and Research, State of California General Plan Guidelines, Appendix A: Guidelines for the Preparation and Content of the Noise Element of the General Plan, 1998.

*Because hospitals are often designed and constructed with high noise insulation properties, it is possible for them to be satisfactorily located in noisier areas.

Exhibit 3.4-2

Land Use Compatibility for
Community Noise Environments

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Would the proposed project:

- a) 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?
- b) Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- c) Generation of excessive groundborne vibration or groundborne noise levels?
(The subsection (c) threshold was evaluated in the initial study (included in Appendix E), which concluded the 2018 Project would have no impact. Therefore, this issue is not studied further in this section.)
- d) 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?
(The subsection (d) threshold was evaluated in the initial study (included in Appendix E), which concluded the 2018 Project would have no impact. Therefore, this issue is not studied further in this section.)

Specific Thresholds of Significance

For purposes of this analysis, the following thresholds are used to evaluate the significance of noise resulting from implementation of the 2018 Project:

Land Use Compatibility Standards

A significant impact would occur if the project would result in a conflict with any of the City's adopted land use compatibility standards. The "normally acceptable" noise levels for residential and commercial land uses are as follows:

- 60 dBA L_{dn} for proposed single-family residential development
- 70 dBA L_{dn} for proposed commercial land use development.

Substantial Increase in Excess of Standards

The City has not formally adopted a definition of what constitutes a "substantial increase" for purposes of conducting noise analysis; therefore, for purposes of this analysis, the City, in its discretion, has decided to use the following definition of a substantial increase, which is consistent with industry-standard protocols and has a strong scientific basis, and utilizes the following criteria.

Construction-related temporary increase standard—General Plan Policy 12-P-9 limits the generation of loud noises on construction sites to the hours of 8:00 a.m. to 5:00 p.m. Section 9.44.010 of the Pittsburg Municipal Code prohibits the operation of pile drivers, hammers, and similar equipment between the hours of 10:00 p.m. and 7:00 a.m. Therefore, a significant impact would occur if: (1) noise-producing construction activities associated with implementation of the 2018 Project would

occur outside of the hours permitted in the Noise Element of the General Plan; and/or (2) would result in generation of a substantial temporary increase in ambient noise levels outside of these hours, thereby resulting in annoyance or sleep disturbance of nearby sensitive receptors. For the reasons discussed above, an increase of 3 dBA or more in the daytime average noise levels would be considered a substantial increase.

Delivery activity (stationary source)-related permanent increase standard—The Pittsburg Municipal Code establishes noise performance standards to limit activities such as deliveries and equipment idling to 65 dBA as measured at the property line when these activities occur between 5:00 p.m. and 8:00 a.m. on the project site adjacent to a residential lot. An increase of 3 dBA or more above an hourly average of 65 dBA would be considered a substantial increase.

Traffic (mobile source) and non-delivery activity (stationary source) permanent increase standard—For purposes of this analysis, a significant impact would occur if the 2018 Project would cause the ambient noise levels that would exist without the 2018 Project to increase by the following increments and exceed the indicated standard as measured at a receiving land use:

- 5 dBA or more even if the L_{dn} would remain below normally acceptable levels for a receiving land use.
- 3 dBA or more, thereby causing the L_{dn} in the project vicinity to exceed normally acceptable levels and result in noise levels that would be considered conditionally acceptable for a receiving land use.
- 1.5 dBA or more where the L_{dn} currently exceeds conditionally acceptable levels for a receiving land use (thus contributing to an already impacted environment).

Approach to Analysis

CEQA includes a presumption against requiring any further environmental review once an EIR has been prepared and certified for a project. Therefore, in accordance with Public Resources Code Section 21166 and CEQA Guidelines Section 15163, this Noise section addresses whether: (1) changes to the original Alves Ranch Project; (2) a change in circumstances under which the original Alves Ranch Project was undertaken; or (3) new information of substantial importance exists, which would result in any new significant impacts or an increase in severity of previously identified significant impacts.

In evaluating whether changes to the 2018 Project as currently proposed would result in new significant noise impacts or an increase in severity of previously identified significant noise impacts, this Noise section considers the incremental difference between the previously approved project as evaluated in the 2004 SEIR and the proposed 2018 Project. Specifically, here the relevant project changes and revisions related to noise include an updated site plan and changes in the ambient noise environment, which are evaluated pursuant to the acoustical study required by Mitigation Measure 14-1 of the 2004 Final EIR. Potential changes due to a revised construction schedule are also evaluated.

Summary of 2018 Project Changes and Methodology Compared to the 2004 Final EIR

Unit Count and Density

2004 Final EIR—assumed 563 multi-family units and resulting density of 17.53 units/acre.

2018 Project—assumes 346 single-family units (along with 10 accessory dwelling units [ADUs]) and resulting density of 13.34 units/acre.

Short Term Noise Measurements

2004 Noise measurement locations—the 2004 EIR included a long-term noise measurement taken at a distance of 70 feet from the edge of SR-4.

2018 Noise measurement locations—a long-term noise measurement was taken from a distance of 80 feet from the edge of the outermost travel lane of SR-4. This measurement captured noise levels from traffic on SR-4 as well as noise levels from the now active BART rail line. The methodology and noise measurement locations were consistent, to the extent feasible and as determined appropriate, with the 2004 Final EIR methodology and measurements.

Construction Schedule

2004 Final EIR—assumed a construction schedule of 6–15 years.

2018 Project—assumes a construction schedule of 1 year.

Noise Measurement Methodology

As discussed in the setting section discussion above, to ascertain the existing noise at and adjacent to the project site, field monitoring was conducted on Monday, October 8, 2018. The purpose of the noise monitoring was to document the existing noise environment and capture the noise levels associated with existing operations or activities on the project site and vicinity. The noise monitoring locations are shown on Exhibit 3.4-1. These locations were selected to provide baseline ambient noise levels for comparison of the 2018 Project's proposed land uses to the City's applicable land use compatibility standards as well as noise performance standards, and then to further compare this information to the analysis contained in the 2004 Final EIR, to determine whether any new significant noise impacts or an increase in severity of previously identified significant noise impacts would occur as a result of the 2018 Project.

The noise measurements were taken using Larson-Davis Model LxT2 Type 2 precision sound level meters programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meter was calibrated using a Larson-Davis calibrator, Model CAL 150. The accuracy of the calibrator is maintained through a program established through the manufacturer and is traceable to the National Bureau of Standards. All noise level measurement equipment meets American National Standards Institute specifications for sound level meters (S1.4 1983 identified in Chapter 19.68.020.AA).

Traffic Noise Modeling Methodology

The FHWA highway traffic noise prediction model (FHWA RD-77-108) was used to evaluate traffic-related noise conditions in the vicinity of the project site. Traffic data used in the model was obtained from the traffic analysis prepared for the 2018 Project (Appendix F). The resultant noise levels were weighed and summed over a 24-hour period in order to determine the L_{dn} values. The FHWA-RD-77-108 Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level. Adjustments are then made to the reference energy mean emission level to account for the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway); the total average daily traffic (ADT); and the percentage of ADT that flows during the day, evening, and night; the travel speed; the vehicle mix on the roadway; a percentage of the volume of automobiles, medium trucks, and heavy trucks; the roadway grade; the angle of view of the observer exposed to the roadway; and the site conditions (“hard” or “soft”) as they relate to the absorption of the ground, pavement, or landscaping.

3.4.5 - Impact Evaluation

Noise Levels That Would Conflict with Any Land Use Plan, Policy, or Regulation

Impact NOI-1: **The 2018 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.**

2004 Final EIR

The 2004 Final EIR concluded that the proposed Vista Del Mar housing would be exposed to traffic noise levels from traffic on SR-4 and West Leland Road that would exceed the “normally acceptable” noise level land use compatibility guideline established by the City for multi-family residential development (65 dBA L_{dn}), thereby resulting in potentially significant impacts.

The 2004 FEIR included Mitigation Measures 14-1(a), (b), and (c), which required construction of a 5- to 10-foot soundwall along West Leland Road, as well as preparation of an acoustical study to determine the noise insulation and other design features needed to maintain interior noise levels at or below 45 dBA L_{dn} , and identification of site design measures to maintain common exterior noise levels at “normally acceptable” levels. The City concluded that impacts would be reduced to less than significant with the incorporation of this mitigation.

2018 Project

The 2018 Project proposes single-family residential rather than multi-family residential development. Therefore, for purposes of analysis for the 2018 Project, a significant impact under Impact NOI-1 would occur if the project would result in a conflict with the “normally acceptable” land use compatibility standards for the proposed single-family residential and the proposed commercial land uses as follows:

- 60 dBA L_{dn} for proposed single-family residential development
- 70 dBA L_{dn} for proposed commercial land use development

The project site would be exposed to traffic noise from the West Leland Road to the south and from SR-4 and BART rail activity to the north.

Traffic modeling was performed using the data obtained from the 2018 Project-specific traffic impact study (included in Appendix F). This traffic impact study provides data for Existing (year 2018),⁶ Near-Term, and Cumulative Conditions. The resultant noise levels were weighed and summed over a 24-hour period to determine the L_{dn} values. The traffic noise modeling input and output files—including the 60 dBA, 65 dBA, and 70 dBA L_{dn} noise contour distances—are included in Appendix E. Table 3.4-5 shows a summary of the traffic noise levels for Existing (year 2018), Near-Term, and Cumulative Conditions, with and without the 2018 Project as measured at 50 feet from the centerline of the outermost travel lane for the modeled roadway segments that are next to the project site.

The land use compatibility for the proposed single-family residential and the proposed commercial land uses are analyzed separately below.

⁶ The existing year is based on the date of the Notice of Preparation, which was released in December 2018.

Table 3.4-5: Traffic Noise Levels Compared to General Plan Land Use Compatibility Guidelines

Roadway Segment	L _{dn} (dBA) 50 feet from Centerline of Outermost Lane								
	Existing	Existing with 2018 Project	Exceed Normally Acceptable Standard for Residential/Commercial ¹	Near-Term without 2018 Project	Near-Term with 2018 Project	Exceed Normally Acceptable Standard for Residential/Commercial ¹	Cumulative without 2018 Project	Cumulative with 2018 Project	Exceed Normally Acceptable Standard for Residential/Commercial ¹
West Leland Road—Tomales Bay Drive to Alves Ranch Road	65.5	66.9	Yes/No	66.5	67.7	Yes/No	70.3	70.9	Yes/No
West Leland Road—Alves Ranch Road to Woodhill Drive	65.6	66.8	Yes/No	66.6	67.6	Yes/No	70.3	70.8	Yes/No
<p>Note: ¹ As measured at the nearest proposed residential or commercial land use. Source: FirstCarbon Solutions 2018.</p>									

Commercial Land Uses—Evaluation of the need for mitigation along West Leland Road

The façades of the closest portion of the potential future commercial development would be located approximately 90 feet from the centerline of West Leland Road. At this distance, traffic noise levels would range up to approximately 69 dBA L_{dn} . These noise levels are within the City’s “normally acceptable” range of up to 70 dBA L_{dn} , for new commercial land use development, and would be considered a less than significant impact for the proposed commercial land use development. No mitigation is required.

Residential Land Uses—Evaluation of the need for mitigation along West Leland Road

The façades of the closest proposed residences would be located approximately 80 feet from the centerline of West Leland Road. At this distance, traffic noise levels would range up to approximately 70 dBA L_{dn} . These noise levels exceed the City’s “normally acceptable” range of up to 60 dBA L_{dn} , but are within the City’s “Conditionally Acceptable” range of up to 70 dBA L_{dn} , for new residential single-family land use development. According to the City’s land use compatibility guidelines, new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. In addition, for new residential development exposed to traffic noise levels in excess of 65 dBA L_{dn} , General Plan policies 12-P-5 and 12-P-6 require site-specific analysis be performed and mitigation be incorporated to ensure that interior noise levels do not exceed 45 dBA L_{dn} . Therefore, the following analysis is provided to determine the mitigation needed to ensure the residential exterior and interior noise levels meet acceptable standards, in compliance with General Plan policies 12-P-5 and 12-P-6 and the land use compatibility guidelines.

Soundwall effectiveness for exterior residential use areas

To determine the noise reduction that soundwalls would provide for the residential lots fronting West Leland Road, an additional traffic noise modeling run was performed to model various barrier heights using the FHWA highway traffic noise prediction model (FHWA RD-77-108). These additional traffic noise modeling input and output files are included in Appendix E. The modeling results show that construction of minimum 8-foot high soundwalls (or equivalent) to shield outdoor active use areas (i.e., backyards) of residential units located within 200 feet of,⁷ and that have a direct line of sight to, West Leland Road would reduce traffic noise levels to below 60 dBA L_{dn} as measured at the outdoor active use areas. This would reduce traffic noise levels to below the City’s “normally acceptable” standard for the outdoor active use areas of the proposed single-family residential land uses.

The 2004 Final EIR included Mitigation Measures 14-1 (b) and (c), requiring inclusion of site design measures and construction of 5- to 10-foot soundwalls along West Leland Road to maintain exterior noise levels to “normally acceptable” levels in proposed outdoor use areas. Therefore, this mitigation measure would remain applicable to the 2018 Project as modified in Mitigation Measure NOI-1a. Mitigation Measure NOI-1a specifies the construction of an 8-foot soundwall (or equivalent buffer that achieves the applicable performance standards) along West Leland Road to achieve the required reduction for residential uses. The soundwalls shall be located to block the line of sight from

⁷ At a distance of 200 feet from the centerline of West Leland Road, traffic noise levels would be reduced to below 60 dBA L_{dn} (an approximate 8.6 dBA reduction due to distance attenuation, and an additional approximate 3 dBA reduction due to proposed landscaping and shielding provided by proposed structures).

the outdoor active use areas to West Leland Road. The locations of the modeled soundwalls to protect outdoor active use areas are shown in Exhibit 3.4-3. The acceptability of the proposed combination of mitigation will be confirmed by the City Engineer, as part of the final plans and permitting process.

Design features required to achieve interior noise levels of 45 dBA L_{dn}

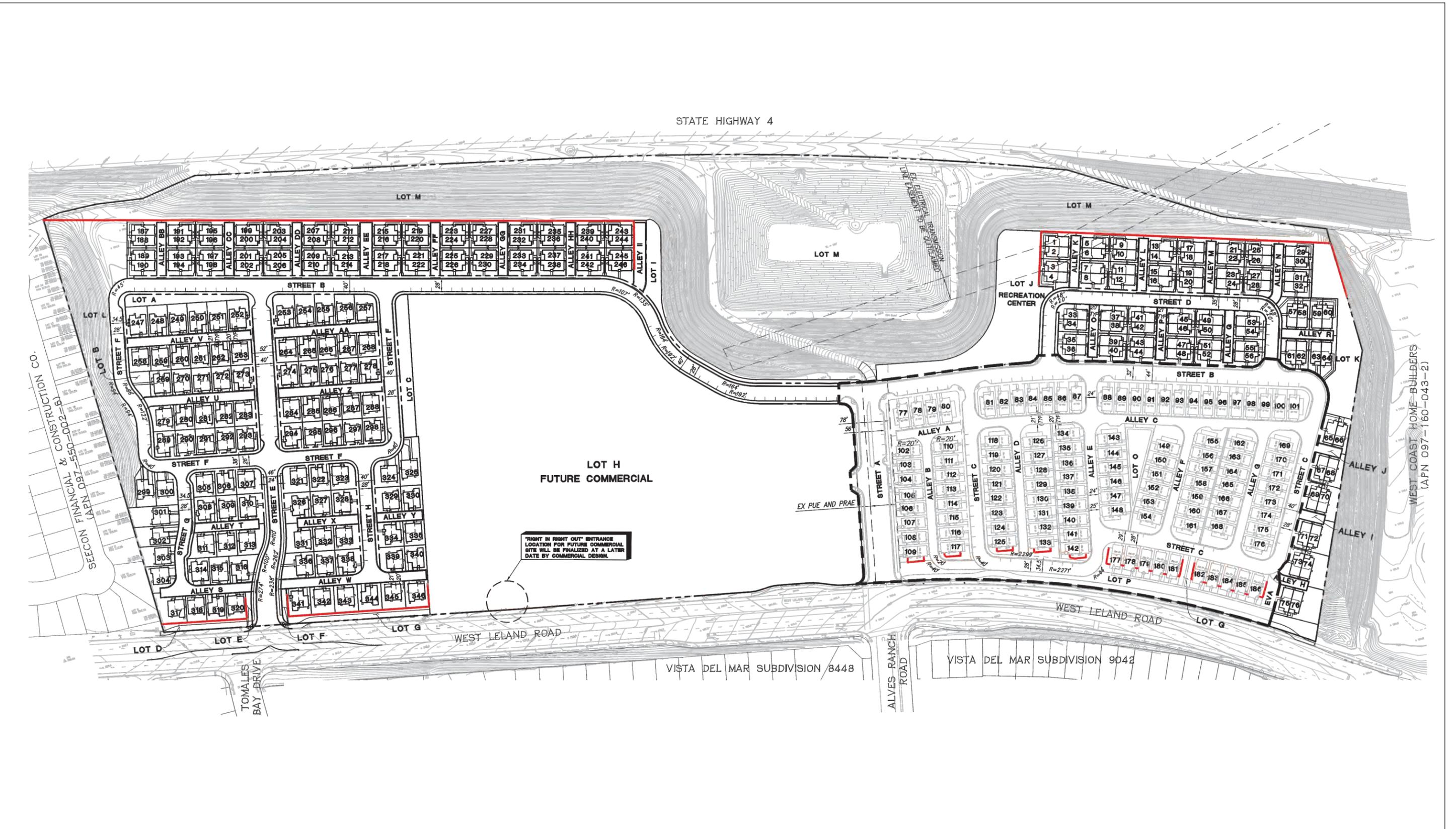
Based on EPA's Protective Noise Levels,⁸ a combination of walls, doors, and windows using standard construction for residences built to California Building Code standards would provide 25 dBA in exterior-to-interior noise reduction with windows closed and 15 dBA or more with windows open. Thus, the combination of standard building construction along with construction of the soundwall identified in NOI-1a would reduce exterior noise levels at some of the *first floor* units of proposed residences from 70 dBA L_{dn} to 45 dBA L_{dn} or lower (70 dBA minus 10 dBA from the soundwall and minus a further 15 dBA from standard construction).

However, some of the *first floor* façades (see Exhibit 3.4-3 for location of modeled soundwalls) and all *second story* façades of the nearest proposed residential units would still have a direct line of sight to traffic on West Leland Road. Thus, some façades would be exposed to traffic noise levels ranging up to approximately 70 dBA L_{dn}. With windows open, interior noise levels of the proposed single-family residential units nearest to West Leland Road would experience interior noise levels of 55 dBA (70 dBA minus 15 dBA). However, implementation of an alternative form of ventilation, such as air conditioning that would allow windows to remain closed, would allow for the full 25 dBA noise reduction (70 dBA—25 dBA = 45 dBA), ensuring that the interior noise level standard of 45 dBA L_{dn} would be maintained in all proposed residential land uses.

The 2004 Final EIR included Mitigation Measures 14-1 (a), which required that a site specific acoustic analysis be conducted to identify noise insulation and other design features to be included in the design to maintain the interior noise level standard for residential units proposed along West Leland Road. Therefore, this mitigation measure would remain applicable to the 2018 Project as modified in Mitigation Measure NOI-1b. Therefore, based on the site-specific acoustic analysis detailed above, the 2018 Project would be required to implement Mitigation Measure NOI-1a requiring an alternative form of ventilation for all residential units within 200 feet⁹ of the centerline of West Leland Road. This alternative form of ventilation would give an occupant the option of controlling noise by keeping the windows shut in order to reduce potential traffic noise impacts to a less than significant level. A standard central air conditioning system or a central heating system equipped with a 'summer switch,' which allows the fan to circulate air without furnace operation requiring mechanical ventilation, would provide a habitable interior environment and meet the airflow provisions under Building Code requirements.

⁸ United States Environmental Protection Agency (EPA). 1978. Protective Noise Levels EPA 550/9-79-100, November.

⁹ At a distance of 200 feet from the centerline of West Leland Road, traffic noise levels would be reduced to below 60 dBA L_{dn} (an approximate 8.6 dBA reduction due to distance attenuation, and an additional approximate 3 dBA reduction due to proposed landscaping and shielding provided by proposed structures).



Source: Ruggeri-Jensen-Azar, Engineers, Planners, Surveyors, July 2018.



— Soundwall Locations

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Commercial Land Uses—Evaluation of the need for mitigation along northern property line, adjacent to SR-4 and BART

A long-term ambient noise measurement was taken in order to document the combined noise levels from traffic on SR-4 and from BART rail activity on the north side of the project site. The long-term measurement was taken on the project site's northern boundary, approximately 150 feet from the centerline of SR-4, and approximately 160 feet east of the site's western boundary. The long-term noise measurement location is shown in Exhibit 3.4-1. The nearest façade of the potential future commercial development would be located approximately 445 feet from the centerline of SR-4. At this distance, combined traffic and BART rail activity would attenuate to below 69 dBA L_{dn} . These noise levels are within the City's "normally acceptable" range of up to 70 dBA L_{dn} , for new commercial land use development, and therefore would be considered a less than significant impact with respect to the proposed commercial land use development.

Residential Land Uses—Evaluation of the need for mitigation along the northern property line, adjacent to SR-4 and BART

The nearest façade of the proposed residential development would be located approximately 210 feet from the centerline of SR-4. At this distance, combined traffic and BART rail activity would attenuate to 74 dBA L_{dn} . These noise levels exceed the City's "normally acceptable" range of up to 60 dBA L_{dn} , for new residential single-family land use development, and also exceed the City's "Conditionally Acceptable" range of up to 70 dBA L_{dn} for new residential single-family land use development. According to the City's land use compatibility guidelines, under these circumstances, new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. In addition, according to the City's General Plan policies 12-P-5 and 12-P-6, for new residential development exposed to traffic noise levels in excess of 65 dBA L_{dn} , site-specific analysis must be performed and mitigation be incorporated to ensure that interior noise levels do not exceed 45 dBA L_{dn} .

Therefore, the following analysis is provided to determine the mitigation needed to reduce exterior and/or interior noise levels for residences along SR-4 and BART to acceptable levels, in compliance with General Plan policies 12-P-5 and 12-P-6 and the City's land use compatibility guidelines.

Soundwall effectiveness for exterior residential use areas along SR-4 and BART

To determine the noise reduction that soundwalls would provide for the residential lots fronting SR-4, a traffic noise modeling run was performed to model various barrier heights using the FHWA highway traffic noise prediction model (FHWA RD-77-108). The traffic noise modeling input and output files are included in Appendix E.

The closest proposed outdoor active use areas to SR-4 would be in the proposed Neighborhood D, located approximately 400 feet from the centerline of SR-4. A minimum 10-foot high soundwall (or an equivalent buffer that achieves the applicable performance standards) located would be required to reduce SR-4 traffic and BART activity noise levels to below the City's "normally acceptable" exterior noise standard of 60 dBA L_{dn} for single-family residential outdoor active use areas. The location of the modeled soundwalls are shown in Exhibit 3.4-3.

Proposed residential units nearest to SR-4 (neighborhoods A-1 and A-2) would not have any outdoor active use areas associated with them. Therefore, conditionally acceptable noise levels would be considered acceptable provided the interior noise level thresholds are met. The modeling results show that a minimum 10-foot high soundwall (or an equivalent buffer that achieves the applicable performance standards) would reduce SR-4 traffic and BART activity noise levels to below 65 dBA L_{dn} , meeting the City's "Conditionally Acceptable" threshold of 70 dBA L_{dn} , for single-family residential land use development.

The 2004 Final EIR included Mitigation Measures 14-1 (a) and (b), which required that a site specific acoustic analysis be conducted to identify noise insulation and other design features to be included in the design to maintain acceptable exterior noise levels for residential units proposed near SR-4. Therefore, this mitigation measure would remain applicable to the 2018 Project as modified in Mitigation Measure NOI-1c. Mitigation Measure NOI-1c specifies the construction of a minimum 10-foot high soundwall (or equivalent buffer that achieves the applicable performance standards) along SR-4 to reduce traffic and BART activity noise levels to meet the City's normally acceptable exterior threshold for the nearest proposed outdoor active use areas; and to also meet the conditionally acceptable exterior threshold of 70 dBA L_{dn} for the nearest proposed residential uses that do not include outdoor active use areas. The location of the modeled soundwalls are shown in Exhibit 3.4-3. The acceptability of the proposed mitigation to meet the applicable performance standards would be confirmed by the City Engineer, as part of the final plans and permitting process for the 2018 Project.

Effectiveness of design measures for residential interiors along SR-4 and BART

As already discussed, standard construction design features for residences built to applicable provisions in the California Building Code would provide a minimum of 25 dBA in exterior-to-interior noise reduction with windows closed and 15 dBA or more with windows open.

Thus, with windows open, the combination of a soundwall as required by Mitigation Measure NOI-1c, along with the incorporation of standard building construction design features, would reduce exterior noise levels at the *first floor* of proposed residences along SR-4, from 74 dBA L_{dn} to only 49 dBA L_{dn} (74 dBA minus 10 dBA from the soundwall and minus a further 15 dBA from standard construction), and would not achieve the 45 dBA L_{dn} interior noise level standard.

Therefore, implementation of an alternative form of ventilation, such as air conditioning, that would allow windows to remain closed would need to be incorporated to achieve compliance with the 45 dBA L_{dn} interior noise level standard (74 dBA minus 10 dBA from the soundwall and minus a further 25 dBA from standard construction would result in interior noise levels of 39 dBA). Traffic noise levels along SR-4 would attenuate to below 60 dBA (normally acceptable levels) at a distance of approximately 400 feet from the centerline of the roadway, with inclusion of the soundwall required in Mitigation Measure NOI-1c. Therefore, the 2018 Project would be required to implement Mitigation Measure NOI-1b requiring incorporation an alternative form of ventilation for all residential units within 400 feet of the centerline of SR-4. This alternative form of ventilation would give an occupant the option of controlling noise by keeping the windows shut in order to reduce potential traffic noise impacts to a less than significant level. A standard central air conditioning system or a central heating system equipped with a 'summer switch,' which allows the fan to

circulate air without furnace operation requiring mechanical ventilation, would provide a habitable interior environment and meet the airflow provisions under building code requirements.

However, even with implementation of the soundwall, *second story* façades of the nearest proposed residential units would still have a direct line of sight to SR-4 and the BART rail line. Projected combined traffic and rail activity noise levels at *second story* façades could still range up to 74 dBA L_{dn} . Even with implementation of an alternative form of ventilation, as required by Mitigation Measure NOI-1b, that would allow windows to remain closed, interior noise levels of the proposed residential units nearest to SR-4 would not meet the normally acceptable interior noise standard of 45 dBA L_{dn} (74 dBA–25 dBA = 49 dBA). Therefore, upgraded wall and window assemblies would be required for all second floor residential units that directly face SR-4. The combined wall and window assembly should be upgraded from standard building code requirements to have a minimum Standard Transmission Class (STC) rating of 32-STC. This would provide sufficient noise reduction, with an adequate margin of safety, to ensure the 45 dBA L_{dn} interior noise level standard is maintained (74 dBA–32 dBA = 42 dBA). Prior to issuance of building permits, the applicant shall have a professional acoustic consultant review the final design plans to provide assurance to City staff that the design would provide the required STC rating to ensure the applicable performance standards are achieved. Mitigation Measure NOI-1d specifies this enhanced STC ratings for wall and window assemblies to ensure compliance with the City's 45 dBA L_{dn} interior noise standard.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

As already required by Mitigation Measure 14-1 of the 2004 Final EIR, the 2018 Project shall incorporate the below mitigation to ensure compliance with the City's exterior and interior noise level performance standards and land use compatibility guidelines. Implementation of the following mitigation, as refined from what was already established in the 2004 Final EIR, would ensure that the 2004 Final EIR remains adequate for the 2018 Project.

MM NOI-1 To reduce potential traffic noise impacts, the following multi-part mitigation measure shall be implemented for the 2018 Project:

- a) The 2018 Project shall construct a soundwall (or equivalent) to protect residential units bordering West Leland Road. The soundwall (or equivalent) shall be a minimum 8-foot high above the finished grade of the residential units. Notwithstanding the foregoing, the 2018 Project applicant may propose an equivalent measure so long as the 2018 Project applicant can demonstrate, via an updated acoustical analysis prepared by a qualified noise consultant and approved by the City Engineer, that the applicable performance standards will be achieved with implication of this equivalent measure. The soundwall (or equivalent) shall effectively block the line of sight to West Leland Road for proposed outdoor active use areas (i.e., backyards or side yards) of all residential units within 100 feet of the edge of the southern project property line. The soundwall (or equivalent) shall be of solid construction, with no vertical or horizontal gaps, and shall have a minimum

surface weight of 4 pounds per square foot. The acceptability of the proposed combination of soundwall (or equivalent) mitigation shall be confirmed by the City Engineer, as part of the final plans and permitting process, to ensure compliance with the applicable performance standards.

- b) The 2018 Project shall implement an alternative form of ventilation for all proposed residential units within 200 feet of the centerline of West Leland Road, and within 400 feet of the centerline of SR-4. This alternative form of ventilation would give an occupant the option of controlling noise by keeping the windows shut in order to reduce potential traffic noise impacts to a less than significant level. A standard central air conditioning system or a central heating system equipped with a 'summer switch,' which allows the fan to circulate air without furnace operation requiring mechanical ventilation, will provide a habitable interior environment and meet the airflow provisions under building code requirements.
- c) The 2018 Project shall construct a soundwall (or equivalent) to protect residential units bordering SR-4. The soundwall (or equivalent) shall be a minimum 10-foot high above the finished grade of the residential units. Notwithstanding the foregoing, the 2018 Project applicant may propose an equivalent measure so long as the 2018 Project applicant can demonstrate, via an updated acoustical analysis prepared by a professional acoustical consultant and approved by the City Engineer, that the applicable performance standards will be achieved with implication of this equivalent measure. The soundwall (or equivalent) shall effectively block the line of sight to SR-4 for all first floor units and proposed outdoor active use areas (i.e., backyards) of all residential units within 400 feet of the centerline of SR-4. The soundwall shall be of solid construction, with no vertical or horizontal gaps, and shall have a minimum surface weight of 4 pounds per square foot. The acceptability of the proposed mitigation shall be confirmed by the City Engineer, as part of the final plans and permitting process, to ensure compliance with the applicable performance standards.
- d) The 2018 Project shall provide upgraded wall and window assemblies for all second story residential units in Neighborhoods A-1 and A-2 that would have a direct line of sight to SR-4 and the BART rail line. The combined wall and window assembly shall have a minimum Standard Transmission Class (STC) rating of 32-STC. This will provide sufficient noise reduction, with an adequate margin of safety, to ensure the 45 dBA L_{dn} interior noise level standard is maintained (74 dBA–32 dBA = 42 dBA). Prior to issuance of building permits, the applicant shall have a professional acoustic consultant review the final design plans to confirm with the City Engineer that the design would provide the required STC rating.

Level of Significance After Mitigation

Less than significant impact.

Substantial Noise Increase in Excess of Standards

Impact NOI-2: **The 2018 Project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.**

Evaluating Construction Noise

2004 Final EIR

The 2004 Final EIR found that construction activity related to the Vista Del Mar development (including the area north of West Leland Road) would increase noise levels at the adjacent Oak Hills and San Marco developments in excess of 60 dBA L_{eq} . In addition, due to the phasing of the development, this impact was determined to be significant because the temporary noise impacts would occur over an extended construction period, which could last from six to 15 years. The 2004 Final EIR required implementation of Mitigation Measure 14-3, which limited the generation of loud noises on construction sites adjacent to existing development to normal business hours between 8:00 a.m. and 5:00 p.m. in compliance with General Plan Policy 12-P-9, and which also imposed additional construction period noise abatement measures reflecting industry best practices at the time. The City concluded that although implementation of Mitigation Measure 14-3 would reduce temporary construction noise impacts to the maximum extent practicable, impacts would remain significant and unavoidable because of the length of construction period. The 2004 Final EIR did not include analysis of construction traffic noise.

2018 Project

The following analysis considered whether the 2018 Project would result in new significant construction-related noise impacts or an increase in the severity of the previously identified significant construction-related noise impacts than were identified in the 2004 Final EIR.

Sensitive receptors in the project vicinity currently include single-family residential land uses to the west and south of the project site. The residential units to the west were under construction at the time of the 2004 Final EIR; the residences to the south are the Vista Del Mar residences which were the subject of the 2004 Final EIR. Therefore, the 2004 Final EIR evaluated the potential effects to all currently existing development.

The increment of difference represented by the 2018 Project includes variations in the site plan and subsequent construction footprint, and variations in the specific length of the construction period as currently estimated. This analysis takes into account the proposed revisions to the site plan as well as the reduced construction schedule. As discussed below, the analysis concludes that implementation of Mitigation Measure NOI-2, as refined from what was adopted in the 2004 Final EIR to reflect current best management construction noise reduction measures, would reduce construction noise impacts to less than significant.

Noise impacts from construction activities associated with the 2018 Project would be a function of the noise generated by construction equipment, equipment location, sensitivity of nearby land uses, and the timing and duration of the construction activities as compared to the original Alves Ranch Project evaluated in 2004 Final EIR. For purposes of this analysis, a significant impact would occur if noise-

producing construction activities associated with implementation of the 2018 Project would (1) occur outside of the hours permitted in the Noise Element of the General Plan; and/or (2) would result in generation of a substantial (3 dBA or greater) temporary increase in ambient noise levels outside of these hours, thereby resulting in annoyance or sleep disturbance of nearby sensitive receptors.

Construction-related Traffic Noise

The 2004 Final EIR did not specifically analyze noise impacts from construction-related traffic. However, this analysis is provided here in order to ensure a robust, conservative evaluation of potential impacts from the 2018 Project. Consistent with current industry standards, a significant impact would result if construction traffic would double daily traffic volumes on any local roadway segment, thereby creating a 3 dBA increase in noise.

The transport of workers and construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the site. Because workers and construction equipment would use existing routes, noise from passing trucks would be similar to existing vehicle-generated noise on these local roadways, and would not result in a doubling of daily traffic volumes on any of the local roadways in the project vicinity.

For this reason, short-term intermittent noise from construction trips would not result in a perceptible increase in hourly- or daily-average traffic noise levels in the project vicinity. This impact would be less than significant.

Construction Equipment Operational Noise

The 2004 Final EIR did not specifically quantify construction equipment noise impacts at adjacent sensitive receptor land uses. However, this analysis is provided here in order to ensure a robust, conservative evaluation of potential impacts from the 2018 Project.

Table 3.4-2 lists the maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 feet between the equipment and a noise receptor.

The site preparation phase, which includes excavation and grading activities, tend to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Therefore, for purposes of providing a conservative analysis, reasonable worst-case construction noise levels resulting from this loudest phase of construction are quantified here. Construction of the 2018 Project is expected to require the use of scrapers, bulldozers, water trucks, haul trucks, and pickup trucks, similar to the original Alves Ranch Project evaluated in the 2004 Final EIR. As described more fully below, implementation of Mitigation Measure 14-3 of the Final EIR, with refinements to incorporate current best practices as shown in Mitigation Measure NOI-2 of this Draft SEIR, would ensure that construction noise would not result in a substantial exceedance of the standards for construction noise established in Policy 12-P-9 of the City's General Plan.

Construction Noise Impacts to Nearest Sensitive Receptors

The nearest residential receptor lies west of the project site along West Leland Road between Willow Pass Road and Tomales Bay Drive, approximately 60 feet from the acoustic center of construction

activity where multiple pieces of heavy machinery would operate at the project site. The acoustic center refers to a point equidistant from multiple pieces of equipment operating simultaneously which would produce the worst-case maximum noise level. The shielding provided by the difference in elevation of the receptors above the project site and by the existing 8-foot high soundwall would provide at least 12 dB of noise shielding attenuation. At this distance and with the noise attenuation provided by the intervening soundwall, construction noise levels would be expected to range up to 76 dBA L_{max} , with a reasonable worst case hourly average of 72 dBA L_{eq} , intermittently, at the exterior facade of the nearest residential home from this community. The ambient noise measurement results summarized in Table 3.4-3 show that existing ambient noise levels in the vicinity of this nearest sensitive receptor range up to 87 dBA L_{max} , with daytime average noise levels of 69 dBA L_{eq} .

Therefore, construction noise levels would not exceed existing background ambient daytime noise levels by more than 3 dBA. Moreover, the 2018 Project would be required to restrict noise generating construction activities to daytime hours only, which would ensure that construction noise would not result in a violation of Policy 12-P-9 of the General Plan or the applicable Municipal Code provision (regulating specific construction activities to certain hours).

The second closest off-site noise-sensitive receptors to the project site lies south of West Leland Road between Tomales Bay Drive and Woodhill Drive, approximately 200 feet from the nearest acoustic center of construction activity where multiple pieces of heavy machinery would operate at the project site. At this distance and with the noise attenuation provided by the existing intervening soundwall, construction noise levels would be expected to range up to 68 dBA L_{max} , with a reasonable worst case hourly average of 64 dBA L_{eq} , intermittently, at the exterior facade of the nearest residential home from this community. The ambient noise measurement results summarized in Table 3.4-3 show that existing ambient noise levels in the vicinity of this nearest sensitive receptor range up to 87 dBA L_{max} , with daytime average noise levels of 69 dBA L_{eq} . Therefore, construction noise levels would not exceed existing background ambient daytime noise levels by more than 3 dBA. Moreover, the 2018 Project would be required to restrict noise generating construction activities to daytime hours only, which would ensure that construction noise would not result in a violation of the standards for construction noise established in Policy 12-P-9 of the General Plan or the applicable Municipal Code provision (regulating specific construction activities to certain hours).

Conclusion of Construction Noise Impacts

The effect of 2018 Project-related construction noise levels on longer-term (hourly or daily) ambient noise levels would be similar to the construction noise levels identified in the 2004 Final EIR. As required by the 2004 Final EIR, the 2018 Project is required to comply with Mitigation Measure 14-3, with refinements to incorporate current best practices as shown in Mitigation Measure NOI-2 of this Draft SEIR. Implementation of Mitigation Measure NOI-2 would ensure that construction noise would not result in a violation of the standards for construction noise established in Policy 12-P-9 of the City's General Plan or the applicable Municipal Code provision (regulating specific construction activities to certain hours).

Therefore, 2018 Project-related temporary construction noise impacts would be less than significant.

The 2004 Final EIR determined that the original Alves Ranch Project would result in a significant and unavoidable impact, based on the length of the construction period. However, the estimated reasonable worst-case construction schedule for full buildout of all project components for the 2018 Project is 31 months (as compared to the original Alves Ranch Project which was six to 15 years). In addition, the site preparation phase, which is the loudest construction phase which was analyzed above, would be expected to last fewer than eight weeks. Therefore, implementation of the 2018 Project would result in construction noise impacts that are less than those identified in the 2004 Final EIR.

Evaluating Operational Noise

2004 Final EIR

The 2004 Final EIR found that increases in traffic noise levels in the project vicinity related to the Vista Del Mar development would be less than significant as measured at the nearest noise sensitive receptors. The analysis identified that a potentially significant stationary noise impact could occur from the proposed water pump station operations, but concluded that with implementation of Mitigation Measure 14-2, requiring site-specific acoustical analysis that would identify noise abating design measures would reduce this impact to less than significant. The analysis further concluded that all other impacts from project-related stationary noise sources would be less than significant and no mitigation would be required.

2018 Project

As discussed below, the 2018 Project would result in similar operational noise impacts to the 2004 Final EIR. In addition, the 2018 Project does not include the Water Pump Station previously analyzed in the 2004 Final EIR, and would therefore result in no impact related to that noise source.

Analysis of Potential Impacts Relating to Operational Traffic Noise

Similar to the significance criteria of the 2004 EIR, a significant impact would occur if the 2018 Project would cause the traffic noise levels that would exist without the 2018 Project to increase by the following increments and exceed the indicated standard as measured at a receiving land use:

- 5 dBA or more even if the L_{dn} would remain below normally acceptable levels for a receiving land use.
- 3 dBA or more, thereby causing the L_{dn} in the project vicinity to exceed normally acceptable levels and result in noise levels that would be considered conditionally acceptable for a receiving land use.
- 1.5 dBA or more where the L_{dn} currently exceeds conditionally acceptable levels for a receiving land use (thus contributing to an already impacted environment).

As shown in Table 3.4-6, the highest traffic noise level increase would occur with implementation of the 2018 Project during the Existing plus 2018 Project condition, along West Leland Road between Tomales Bay Drive and Alves Ranch Road. Along this roadway segment, the 2018 Project would result in an increase of 1.4 dBA under Existing plus 2018 Project conditions, with resulting noise levels ranging up to 66.9 dBA L_{dn} , as measured at 50 feet from the centerline of the outermost travel lane. Existing traffic noise levels on roadway segments adjacent to the project site are documented to

range up to 65.5 dBA L_{dn} along West Leland Road between Tomales Bay Drive and Alves Ranch Road. As shown in Table 3.4-6, the above-referenced traffic noise level increase is the highest that would occur during any of the conditions evaluated (Existing, Near-Term and Cumulative).

The 1.4 dBA increase would be imperceptible and would not exceed the standard of significance. Therefore, 2018 Project-related traffic noise level increases for implementation of the 2018 Project would result in a less than significant impact during of the conditions evaluated (Existing, Near-Term and Cumulative).

The 2018 Project is consistent with the analysis in the 2004 Final EIR which similarly determined that the project would result in less than significant increases in traffic noise levels along modeled roadway segments in the project vicinity. Therefore, these impacts are equal to or less than those considered in the 2004 Final EIR and no further analysis is necessary to supplement the 2004 Final EIR.

Table 3.4-6: Traffic Noise Levels Increase Comparison

Roadway Segment	L _{dn} (dBA) 50 feet from Centerline of Outermost Lane									
	Existing	Existing with 2018 Project	Increase over Existing (dBA)	Near-Term without 2018 Project	Near-Term with 2018 Project	Increase over Near-Term without 2018 Project (dBA)	Cumulative without 2018 Project	Cumulative with 2018 Project	Increase over Cumulative without 2018 Project (dBA)	Substantial Increase (Yes/No)?
West Leland Road—San Marcos Boulevard to Tomales Bay Drive	66.6	67.1	0.5	66.9	68.1	1.2	70.5	71.1	0.6	No
West Leland Road—Tomales Bay Drive to Alves Ranch Road	65.5	66.9	1.4	66.5	67.7	1.2	70.3	70.9	0.6	No
West Leland Road—Alves Ranch Road to Woodhill Drive	65.6	66.8	1.2	66.6	67.6	1.0	70.3	70.8	0.5	No
West Leland Road—Woodhill Drive to Southwood Drive	62.6	63.7	1.1	63.8	64.7	0.9	67.5	68.0	0.5	No
West Leland Road—Southwood Drive to BART Exit	62.9	63.9	1.0	64.0	64.8	0.8	67.6	68.1	0.5	No
West Leland Road—BART Exit to BART Entrance	63.1	64.0	0.9	64.2	64.9	0.7	67.8	68.2	0.4	No
West Leland Road—BART Entrance to Oak Hills Drive	63.1	64.0	0.9	64.2	64.9	0.7	68.3	68.6	0.3	No
West Leland Road—Oak Hills Drive to Bailey Road	63.8	64.6	0.8	64.8	65.5	0.7	68.8	69.1	0.3	No

Source: FirstCarbon Solutions 2018.

Analysis of Substantial Increases from Stationary Noise Sources

For purposes of this analysis, a significant impact would occur if operational noise levels generated by stationary noise sources at the 2018 Project site would result in a substantial permanent increase in ambient noise levels in excess of any of the applicable noise performance thresholds. The City has established noise performance standards for deliveries and equipment idling to 65 dBA as measured at the property line when these activities occur between 5:00 p.m. and 8:00 a.m. on a project site adjacent to a residential lot. For non-delivery activity stationary noise sources, a significant impact would occur if the 2018 Project-related stationary noise sources would cause the ambient noise levels that would exist without the 2018 Project to increase by the following increments and exceed the indicated standard as measured at a receiving land use:

- 5 dBA or more even if the L_{dn} would remain below normally acceptable levels for a receiving land use.
- 3 dBA or more, thereby causing the L_{dn} in the project vicinity to exceed normally acceptable levels and result in noise levels that would be considered conditionally acceptable for a receiving land use.
- 1.5 dBA or more where the L_{dn} currently exceeds conditionally acceptable levels for a receiving land use (thus contributing to an already impacted environment).

Similar to the original Alves Ranch Project evaluated in the 2004 Final EIR, the 2018 Project would generate noise from truck delivery, loading and unloading activities at commercial loading areas; parking lot activities, which include people conversing, doors shutting, engine startup, and slow-moving vehicles; and from new exterior mechanical equipment sources, such as rooftop ventilation systems on proposed residential and commercial uses. Potential noise impacts from these noise sources are analyzed below.

Truck Delivery, Loading and Unloading Activities

As discussed below, the 2018 Project-related loading and unloading activities would not result in a substantial permanent increase in ambient noise levels in excess of the noise performance thresholds.

The type of loading and unloading activity that would occur for the potential future commercial component of the 2018 Project is the loading and unloading of merchandise at the 2018 Project's proposed commercial loading areas. Typical noise levels from this type of loading and unloading activity can range from 70 dBA to 80 dBA L_{max} as measured at 50 feet. Commercial loading and unloading activities at the 2018 Project site could be located as close as 175 feet from the nearest off-site sensitive receptors, which would be the single-family residential homes located south of the project site on Ashbridge Bay Drive. At this distance and with the noise attenuation provided by the existing intervening 8-foot high soundwall, noise levels from these types of activities would be expected to attenuate to below 57 dBA L_{max} , in the outdoor active use area (backyard) of the closest off-site residential receptor. These noise levels would not exceed the City's nighttime noise performance standard of 65 dBA as measured at the nearest receiving residential receptor property. The impact would be less than significant.

The 2004 Final EIR similarly determined that the project would result in less than significant impacts related to project commercial stationary operational noise sources. Therefore, these impacts are equal to or less than those identified in the 2004 Final EIR and no further analysis is necessary to supplement the 2004 Final EIR.

Parking Lot Activities

As discussed below, noise levels resulting from parking activities at proposed parking areas would not result in a substantial permanent increase in ambient noise levels in excess of the applicable noise performance threshold.

Typical parking lot activities include people conversing, doors shutting, or vehicles idling generate noise levels of approximately 60 dBA to 70 dBA L_{max} at 50 feet. At such time as the potential future commercial component is constructed, these activities are expected to occur intermittently throughout the day, as residents, visitors, and staff arrives and leaves the parking lot areas. The nearest off-site sensitive receptors to the 2018 Project's proposed parking areas for the commercial component are the single-family residential homes located south of the project site along West Leland Road between Willow Pass Road and Tomales Bay Drive. The nearest residential home from this community would be located approximately 220 feet from the nearest acoustic center of commercial parking lot activity. The acoustical center reference is used because parking lot activities occur at some distance from one another across a parking lot and the combined noise level as measured at a point equidistant from the sources (acoustic center) would be the reasonable worst-case maximum noise level. There is an existing 8-foot high soundwall along the northern property line of these nearest residential land uses. At this distance and with noise reduction for the shielding provided by the existing 8-foot high soundwall, parking lot noise levels would attenuate to below 49 dBA L_{max} in the outdoor active use area (backyard) of the closest off-site residential receptor. These noise levels would not result in an exceedance of the City's normally acceptable land use compatibility standard of 60 dBA L_{dn} for the nearest receiving residential land use. The impact would be less than significant.

The 2004 Final EIR similarly determined that the project would result in less than significant impacts related to project commercial stationary operational noise sources. Therefore, these impacts are equal to or less than those identified in the 2004 Final EIR and no further analysis is necessary to supplement the 2004 Final EIR.

Mechanical Equipment Operations

As discussed below, noise levels generated by proposed mechanical ventilation equipment would not result in a substantial permanent increase in ambient noise levels in excess of the applicable noise performance threshold.

At the time of preparation of this analysis, details were not available pertaining to proposed mechanical ventilation systems for the 2018 Project. Therefore, for purposes of a conservative evaluation, a reference noise level for typical mechanical ventilation systems was used for this analysis. Noise levels from typical residential mechanical ventilation equipment are anticipated to range up to approximately 60 dBA L_{eq} at a distance of 25 feet. Proposed mechanical ventilation systems at the project site could be located as close as 40 feet from the nearest off-site sensitive

receptors, which are the single-family residential homes located north of West Leland Road between San Marco Boulevard and Tomales Bay Drive. At this distance and with noise reduction for the shielding provided by the existing soundwall and the elevation difference, noise levels generated by mechanical ventilation equipment would attenuate to less than 45 dBA L_{eq} in the outdoor active use area (backyard) of the closest off-site residential receptor. These noise levels would not result in an exceedance of the City's normally acceptable land use compatibility standard of 60 dBA L_{dn} for the nearest receiving residential land use. The impact would be less than significant.

The 2004 Final EIR similarly determined that the project would result in less than significant impacts related to project stationary operational noise sources. Therefore, these impacts are equal to or less than those identified in the 2004 Final EIR and no further analysis is necessary to supplement the 2004 certified Final EIR.

Level of Significance Before Mitigation

Potentially significant (for construction noise).

As already required by Mitigation Measure 14-3 of the 2004 Final EIR, the 2018 Project shall incorporate mitigation to ensure compliance with the City's construction schedule requirements. Implementation of the following mitigation, as refined from what was already established in the 2004 Final EIR, would ensure that the 2004 Final EIR would remain adequate.

MM NOI-2 To reduce potential impacts related to construction noise, the Project shall restrict construction-related activities to normal business hours of 8:00 a.m. to 5:00 p.m. Monday through Friday. The Project shall also implement the following construction period noise abatement measures and best practices:

- The construction contractor shall ensure that all internal combustion engine-driven equipment is equipped with mufflers that are in good condition and appropriate for the equipment.
- The construction contractor shall select quiet construction equipment, particularly air compressors, whenever feasible
- The construction contractor shall locate stationary noise-generating equipment as far as feasible from sensitive receptors when sensitive receptors adjoin or are near a construction project area. In addition, the project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, whenever feasible.
- The construction contractor shall prohibit unnecessary idling of internal combustion engines.
- The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.
- Designate a "noise disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaint (e.g. starting too

early, bad muffler, etc.) and institute reasonable measures, consistent with this Improvement Measure, warranted to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site.

- Route all construction traffic to and from the project site via designated truck routes where practical. Prohibit construction-related heavy truck traffic in residential areas where feasible.
- The construction contractor shall limit noise producing construction activity to the daytime hours between 8:00 a.m. and 5:00 p.m.

Level of Significance After Mitigation

Less than significant impact.

3.5 - Transportation

3.5.1 - Introduction

This section describes the existing transportation setting and the potential environmental effects from implementation of the 2018 Project on the project site and its surrounding area, as compared to those impacts evaluated in the 2004 Environmental Impact Report (EIR), and to determine whether additional analysis is necessary to ensure the 2004 Final EIR is adequate for purposes of evaluating the 2018 Project. Descriptions and analysis in this section are based on a Transportation Impact Assessment (TIA), prepared by Fehr & Peers and included in this Draft Supplemental Environmental Impact Report (Draft SEIR) as Appendix F.

As explained more fully in this transportation section, the 2004 Final EIR concluded that implementation of the original Alves Ranch project would result in significant impacts at several study intersections. The 2004 Final EIR included mitigation that consisted of improvements to impacted facilities. Even with mitigation, the 2004 FEIR concluded that some transportation impacts would remain significant and unavoidable because implementation must be completed by other jurisdictions outside the control of the lead agency.

The 2004 EIR evaluated a much larger project area, including substantial acreage south of West Leland Road, which has now been developed. Many of the mitigation measures from the 2004 EIR related to the acreage south of West Leland Road.

This transportation section includes updated environmental setting information to characterize the existing environment as local and regional development has significantly changed the background transportation conditions in the study area since the preparation of the 2004 Final EIR. This analysis includes additional analysis and refinements to mitigation measures, where needed, to ensure that the analysis provided by the 2004 Final EIR, as revised herein, is adequate to evaluate the project as currently proposed.

3.5.2 - Environmental Setting

Existing Roadway Network

The project site is located in the City of Pittsburg, and is bound by State Route (SR) 4 to the north, an undeveloped parcel to the east, West Leland Road and residential development to the south, and a residential development to the west. Pittsburg is located in eastern Contra Costa County, west of the City of Antioch and east of the City of Concord and the unincorporated community of Bay Point. Land uses surrounding the project site are generally residential, with the Pittsburg/Bay Point Bay Area Rapid Transit (BART) station located approximately 0.25 mile east of the site. Regional access to the site is provided by SR-4, Bailey Road, and West Leland Road. An extension of the existing Alves Ranch Road would provide local access to the 2018 Project. The following discusses the existing roadways that would provide access to the site and thus are most likely to experience direct traffic impacts, if any, from the 2018 Project.

State Route 4

SR-4 is an east-west highway that extends from Hercules in the west, to Stockton and the Sierra Nevada Mountains in the east. SR-4 is an eight-lane highway in the project vicinity, with three general purpose lanes and one high occupancy vehicle lane in each direction. SR-4 is a designated Route of Regional Significance by the Contra Costa Transportation Agency (CCTA). Routes of Regional Significance are roadways that connect two or more subareas of Contra Costa County, cross county boundaries, carry significant through traffic, and/or provide access to a regional highway or transit facility. California Department of Transportation (Caltrans) uses ramp meters to moderate the flow of vehicles onto the highway during peak commute periods in the study area. Ramp meters were not in operation at the time the 2004 Final EIR was prepared, nor where they contemplated.

West Leland Road

West Leland Road is a four-lane east-west arterial street that forms the southern boundary of the project site and extends through the City of Pittsburg. At Century Boulevard, it continues into the City of Antioch as Delta Fair Boulevard. It currently terminates west of San Marco Boulevard but, as part of the City's Capital Improvement Program (CIP Project ST-55), it is proposed to connect with Avila Road and then connect to Willow Pass Road in Concord. West Leland Road is a designated Route of Regional Significance. In the project vicinity, Class II bicycle lanes are provided on West Leland Road, and sidewalks are provided adjacent to developed parcels as well as along a portion of the project site. A landscaped median is also provided. No on-street parking is permitted. The posted speed limit is 45 miles per hour.

Alves Ranch Road

Alves Ranch Road is a generally a two-lane, north-south collector roadway that intersects with West Leland Road.¹ South of West Leland Road, Class II bicycle facilities are provided. On-street parking is prohibited on portions of Alves Ranch Road where housing does not front the roadway. Where direct residential access is provided, on-street parking is permitted. Alves Ranch Road has a posted speed limit of 25 miles per hour.

San Marco Boulevard

San Marco Boulevard is a north-south, four-lane roadway that terminates just south of Rio Verde Circle, and continues north on SR-4 as Willow Pass Road. It primarily provides access to the San Marco subdivision, which is still under construction. Sidewalks are provided along both sides of the roadway, except for a gap on the west side of the roadway between Willow Pass Road and the Arco gas station at the corner of West Leland Road at San Marco Boulevard. Class II bicycle lanes are provided between West Leland Road and Willow Pass Road. San Marco Boulevard has a posted speed limit of 40 miles per hour.

Bailey Road

Bailey Road is a north-south roadway that connects the City of Concord to the unincorporated community of Bay Point, through Pittsburg. In the City of Pittsburg, it provides two travel lanes in each

¹ This roadway would be extended into the project site as part of the project to provide primary access to the eastern residential neighborhood and the commercial center.

direction in the vicinity of SR-4. South of West Leland Road, Bailey Road narrows to provide one travel lane in each direction. Sidewalks are provided on this roadway along all portions of the road adjacent to existing development within the City of Pittsburg, and Class II bicycle facilities are provided north of West Leland Road. South of Willow Avenue, Bailey Road transitions to a two-lane rural roadway without pedestrian or bicycle facilities. Limited shoulders are provided. In the rural area, the posted speed limit is 45 miles per hour. In the urbanized area, the posted speed limit is 30 miles per hour. Bailey Road connects to the City of Concord and is used as a commuter thoroughfare; it typically carries higher levels of vehicle traffic than the roadway was designed to accommodate.

Study Facilities

This study evaluates weekday morning (7:00 a.m. to 9:00 a.m.) and weekday evening (4:00 p.m. to 6:00 p.m.) peak periods to coincide with the time-periods when adjacent street traffic demands are greatest for the intersections evaluated as part of the 2004 Final EIR, as well as two additional intersections that were selected for inclusion in the updated assessment based on the proposed project trip generation, trip distribution patterns, and consultation with City staff. The study addresses conditions without and with the 2018 Project at the following intersections (Exhibit 3.5-1):

1. SR-4 Westbound Ramps/Evora Road at San Marco Boulevard/Willow Pass Road
2. SR-4 Eastbound Ramps at San Marco Boulevard
3. West Leland Road at San Marco Boulevard
4. West Leland Road at Tomales Bay Drive (intersection not previously evaluated in the 2004 Final EIR)
5. West Leland Road at Alves Ranch Road
6. West Leland Road at Woodhill Drive
7. West Leland Road at Southwood Drive
8. West Leland Road at BART Exit
9. West Leland Road at BART Entrance
10. West Leland Road at Oak Hills Drive
11. Bailey Road at Canal Road (intersection not previously evaluated in the 2004 Final EIR)
12. SR-4 Westbound Ramps/Canal Road at Bailey Road
13. SR-4 Eastbound Ramps/BART at Bailey Road
14. West Leland Road at Bailey Road
15. West Leland Road at Chestnut Drive
16. Bailey Road at Myrtle Drive
17. Bailey Road at Concord Boulevard

18. Willow Pass Road at Avila Road

The following highway segments were evaluated based on the Delay Index:

1. SR-4, between Arnold Industrial Place/Solano Way and SR-242
2. SR-4, between SR-242 and Port Chicago Highway
3. SR-4, between Port Chicago Highway and Willow Pass Road
4. SR-4, between Willow Pass Road and San Marco Boulevard
5. SR-4, between San Marco Boulevard and Bailey Road
6. SR-4, between Bailey Road and Railroad Avenue

An assessment of vehicle queues at the highway on-ramps where project traffic is expected to be concentrated and ramp metering is operational was conducted, including:

1. SR-4 Westbound Ramps Loop On-ramp on northbound San Marco Boulevard and south of Evora Road/Willow Pass Road
2. SR-4 Eastbound Ramps at Bailey Road

The 2004 Final EIR also evaluated the highway segments noted above. The 2004 Final EIR did not evaluate on-ramp operations, as ramp metering was not in affect at the time the 2004 Final EIR analysis was conducted.

Level of Service

The operations of roadway facilities are described with the term “level of service” (LOS), consistent with the City’s practice for analyzing traffic.² LOS is a qualitative description of traffic flow from a vehicle driver’s perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined ranging from LOS A (free-flow conditions) to LOS F (overcapacity conditions). LOS E corresponds to operations “at capacity.” When volumes exceed capacity, stop-and-go conditions result and operations are designated LOS F.

Signalized Intersections

Traffic conditions at signalized intersections were evaluated using methods developed by the Transportation Research Board, as documented in the *2010 Highway Capacity Manual* (2010 HCM) for vehicles using the analysis software Synchro 10.0. The HCM method calculates control delay at an intersection based on inputs such as traffic volumes, lane geometry, signal phasing and timing, pedestrian crossing times, and peak-hour factors. Control delay is defined as the delay directly associated with the traffic control device (i.e., a stop sign or a traffic signal) and specifically includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The relationship between LOS and control delay is summarized in Table 3.5-1.

² In addition to the LOS analysis, the Draft SEIR also includes a VMT analysis for informational purposes. See Appendix F, Section 9 for the VMT discussion.

Table 3.5-1: Signalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	< 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume to capacity ratio (V/C) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: Fehr & Peers 2018.

Unsignalized Intersections

For unsignalized (all-way stop controlled and side-street stop controlled) intersections, the 2010 HCM method for unsignalized intersections was used. With this method, operations are defined by the average control delay per vehicle (measured in seconds). The control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in queue. Table 3.5-2 summarizes the relationship between LOS and delay for unsignalized intersections. At side-street stop controlled intersections, the delay is calculated for each stop-controlled movement, the left turn movement from the major street, as well as the intersection average. The intersection average delay and highest movement/approach delay are reported for side-street stop controlled intersections.

Table 3.5-2: Unsignalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
A	Little or no delays	≤ 10.0
B	Short traffic delays	> 10.0 to 15.0
C	Average traffic delays	> 15.0 to 25.0
D	Long traffic delays	> 25.0 to 35.0
E	Very long traffic delays	> 35.0 to 50.0

Table 3.5-2 (cont.): Unsignalized Intersection LOS Criteria

Level of Service	Description	Delay in Seconds
F	Extreme traffic, delays where intersection capacity exceeded	> 50.0

Source: Fehr & Peers 2018.

Highway Segments

For highway segments, the East County Action Plan for Routes of Regional Significance (as prepared by CCTA) has established a delay index of 2.5 as the Multimodal Transportation Service Objective (MTSO) for SR-4 through the study area. The delay index is the ratio of travel time on a facility divided by the travel times that occur during non-congested free-flow periods. Should the delay index exceed 2.5 during either the AM or PM peak period, highway operations would be considered deficient. This would equate to peak-hour travel taking 2.5 times as long as off-peak travel or an average travel speed below 26 miles per hour assuming a non-congested free-flow speed of 65 miles per hour. The number of vehicles traveling in the high occupancy vehicle (HOV) lane is also an MTSO (>600 vehicles/lane/peak-hour in peak direction).

Existing Traffic Counts

As transportation conditions in the study area have changed since the preparation of the 2004 Final EIR, and the CCTA technical procedures recommend that new traffic counts be conducted every 2 years, updated peak period intersection turning movement counts were collected at the study locations. Weekday morning (7:00 a.m. to 9:00 a.m.) and evening (4:00 p.m. to 6:00 p.m.) peak period intersection turning movement counts were collected at the study intersections, including separate counts of pedestrians and bicyclists, in May 2018 and October 2018 with area schools in normal session and in accordance with industry standard protocols. Peak-hour intersection vehicle volumes are summarized on Exhibit 3.5-2 along with existing lane configurations and traffic controls. Bicycle and pedestrian counts are presented on Exhibit 3.5-3; as shown, existing bicycle and pedestrian activity at the study intersections is generally low.

Existing Traffic Conditions

Based on the updated traffic count data and the current lane configurations, traffic control and other factors, updated existing conditions were evaluated to account for changed circumstances that were not previously evaluated.

Existing intersection lane configurations, signal timings, and peak-hour turning movement volumes were used to calculate the levels of service for the study intersections during each peak-hour, using the Synchro 10.0 software program, as presented in Table 3.5-3. Observed peak-hour factors were used at all intersections for the existing analysis. Pedestrian and bicycle activity was also factored into the analysis. Detailed intersection LOS calculation worksheets are presented in Appendix B to this Draft SEIR. As shown, signalized study intersections generally operate within the LOS standards set by the City of Pittsburg, CCTA, and the City of Concord, except for the West Leland Road at San Marco Boulevard intersection that operates at a LOS F during the AM peak-hour.

Table 3.5-3: Existing Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Level of Service Standard	Delay ²	LOS	Peak Hour Signal Warrant Met?
1. SR-4 Westbound Ramps at San Marco Boulevard/Evora Road	Signal	AM PM	Low-LOS D (50 seconds)	37 ³ 12	D B	N/A
2. SR-4 Eastbound Ramps at San Marco Boulevard	Signal	AM PM	Low-LOS D (50 seconds)	7 8	A A	N/A
3. West Leland Road at San Marco	Signal	AM PM	LOS D (55-seconds)	119 36	F D	N/A
4. West Leland Road at Tomales Bay Drive	SSSC	AM PM	LOS D (55-seconds)	0 (11) 0 (11)	A (B) A (B)	No No
5. West Leland Road at Alves Ranch Road	Signal	AM PM	LOS D (55-seconds)	9 12	A B	N/A
6. West Leland Road at Woodhill Drive	Signal	AM PM	LOS D (55-seconds)	14 11	B B	N/A
7. West Leland Road at Southwood Drive	Signal	AM PM	LOS D (55-seconds)	14 17	B B	N/A
8. West Leland Road at BART Exit	Signal	AM PM	LOS D (55-seconds)	8 12	A B	N/A
9. West Leland Road at BART Entrance	Signal	AM PM	LOS D (55-seconds)	8 10	A A	N/A
10. West Leland Road at Oak Hills Drive	Signal	AM PM	LOS D (55-seconds)	12 18	B B	N/A
11. Bailey Road at Canal Road/SR-4 Westbound Ramps	Signal	AM PM	LOS E (80-Seconds)	37 16	D B	N/A
12. Bailey Road at SR-4 Westbound Ramps	SSSC	AM PM	LOS E (80-Seconds)	1 (18) 17 (140)	A (C) C (F)	No No
13. Bailey Road at BART/SR-4 Eastbound Ramps	Signal	AM PM	LOS E (80-Seconds)	16 23	B C	N/A

Table 3.5-3: Existing Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Level of Service Standard	Delay ²	LOS	Peak Hour Signal Warrant Met?
14. West Leland Road at Bailey Road	Signal	AM PM	LOS E (80-Seconds)	38 25	D C	N/A
15. West Leland Road at Chestnut Drive	Signal	AM PM	LOS D (55-seconds)	28 13	C B	N/A
16. Bailey Road at Myrtle Drive	SSSC	AM PM	LOS E (80-Seconds)	6 (43) 2 (22)	A (E) A (C)	Yes No
17. Bailey Road at Concord Boulevard	Signal	AM PM	LOS E (80-Seconds)	42 43	D D	N/A
18. Willow Pass Road at Avila Road	SSSC	AM PM	LOS E (80-Seconds)	1 (13) 1 (37)	A (B) A (E)	No No

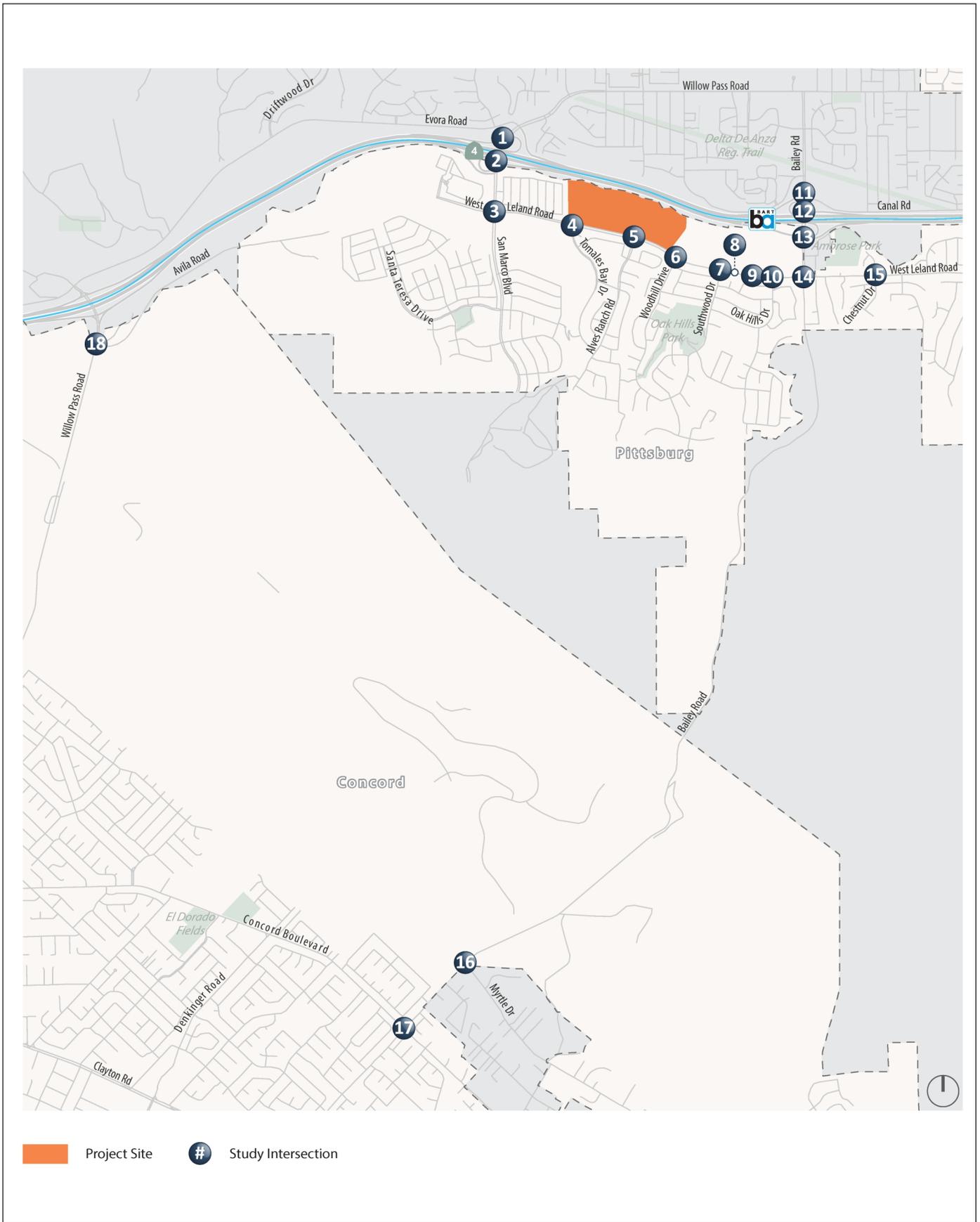
Notes:

¹ Signal = signalized intersection; SSSC = side-street stop-control

² Average intersection delay is calculated for all signalized intersections using the HCM method for vehicles.

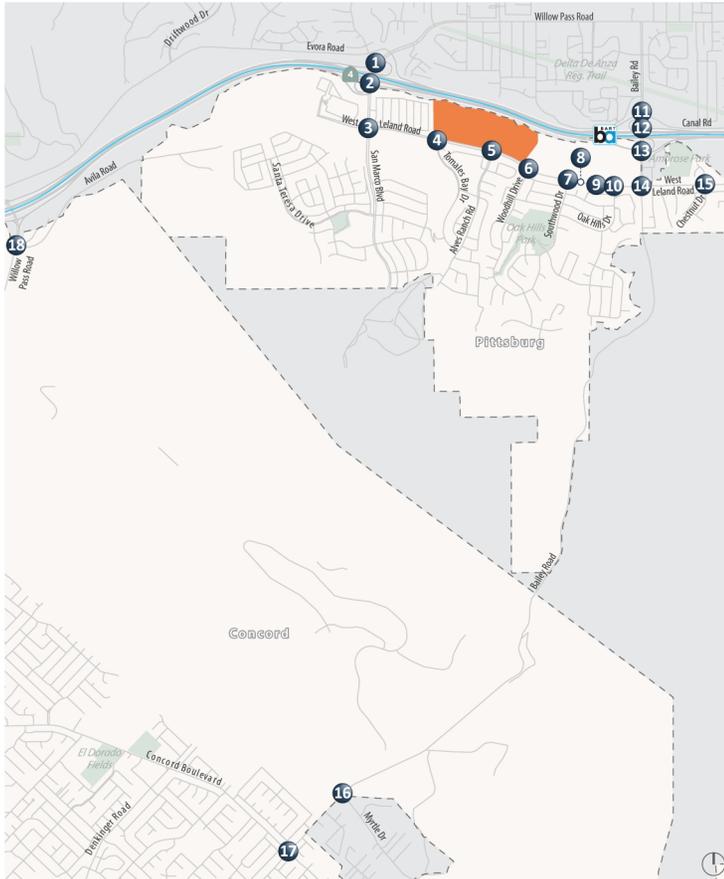
³ Delay presented here does not consider delay associated with westbound SR-4 on-ramp ramp-metering.

Source: Fehr & Peers 2018



Source: Fehr & Peers, November 2018.

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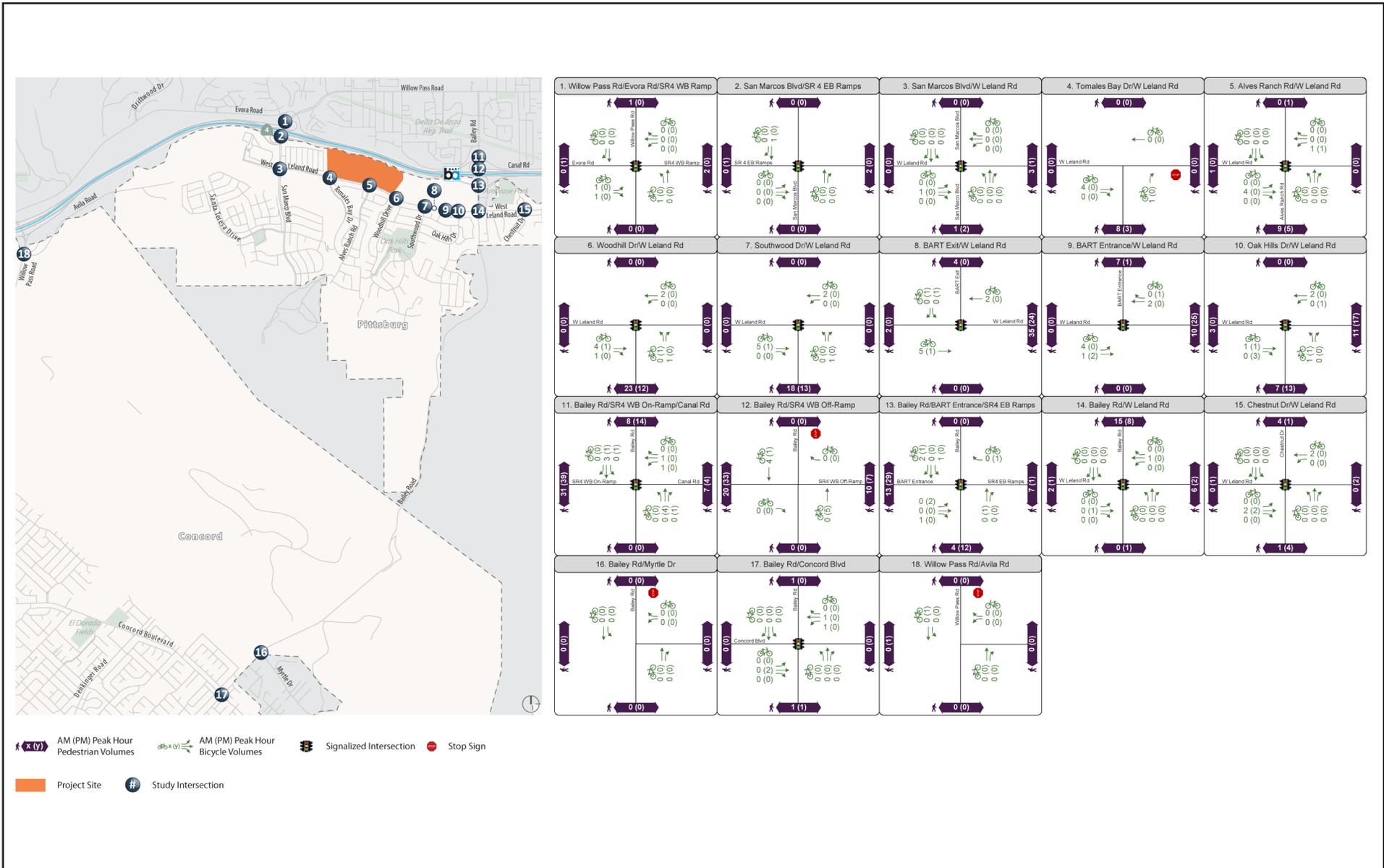


1. Willow Pass Rd/Evora Rd/SR4 WB Ramp 11 (243) 19 (51) 7 (21) 384 (883) 320 (123) 1,680 (621) 175 (31) 7 (88) 311 (185) 530 (363) 1,533 (515)	2. San Marcos Blvd/SR 4 EB Ramps 997 (267) 704 (1,006) 267 (297) 263 (218) 254 (800) 212 (605)	3. San Marcos Blvd/W Leland Rd 16 (88) 176 (264) 204 (453) 809 (222) 142 (78) 234 (129) 216 (133) 46 (74) 63 (18) 36 (22) 440 (182) 223 (101)	4. Tomales Bay Dr/W Leland Rd 1,209 (442) 451 (569) 22 (32) 17 (11)	5. Alves Ranch Rd/W Leland Rd 0 (0) 0 (0) 0 (0) 10 (8) 415 (500) 30 (63) 0 (0) 0 (0) 115 (44) 94 (50)
6. Woodhill Dr/W Leland Rd 868 (452) 19 (53) 532 (429) 49 (87) 112 (45) 42 (34)	7. Southwood Dr/W Leland Rd 763 (450) 34 (114) 501 (396) 73 (73) 124 (48) 103 (73)	8. BART Exit/W Leland Rd 88 (133) 76 (187) 709 (434) 604 (463)	9. BART Entrance/W Leland Rd 262 (77) 709 (435) 138 (82) 545 (577)	10. Oak Hills Dr/W Leland Rd 930 (489) 90 (156) 520 (534) 25 (38) 41 (24) 168 (117)
11. Bailey Rd/SR4 WB On-Ramp/Canal Rd 183 (119) 476 (513) 89 (75) 127 (106) 338 (128) 283 (176) 546 (236) 497 (684) 246 (633)	12. Bailey Rd/SR4 WB Off-Ramp 168 (706) 84 (306) 217 (401)	13. Bailey Rd/BART Entrance/SR4 EB Ramps 188 (134) 577 (697) 210 (276) 214 (625) 52 (109) 48 (263) 187 (369) 638 (686) 263 (389)	14. Bailey Rd/W Leland Rd 92 (181) 413 (186) 166 (477) 613 (264) 887 (192) 293 (26) 178 (145) 124 (353) 364 (77) 74 (205) 202 (439) 19 (157)	15. Chestnut Dr/W Leland Rd 11 (4) 0 (0) 4 (1) 3 (0) 1,802 (438) 1 (2) 6 (4) 318 (879) 18 (25) 89 (20) 1 (0) 3 (5)
16. Bailey Rd/Myrtle Dr 688 (274) 202 (23) 68 (60) 32 (17) 241 (620) 52 (48)	17. Bailey Rd/Concord Blvd 666 (95) 287 (139) 101 (78) 75 (114) 1,051 (341) 121 (28) 127 (388) 324 (748) 72 (64) 33 (39) 124 (870) 17 (29)	18. Willow Pass Rd/Avila Rd 217 (414) 6 (14) 11 (13) 1 (6) 584 (1,560) 1 (0)		

XX (YY) AM (PM) Peak Hour Traffic Volumes
 Signalized Intersection
 Stop Sign
 Project Site
 Study Intersection

Source: Fehr & Peers, November 2018.

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Source: Fehr & Peers, November 2018.

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In addition, as shown in Table 3-5.3, the unsignalized intersection of Bailey Road at Myrtle Drive currently experiences high levels of delay for vehicles turning from Myrtle Drive to Bailey Road during the AM peak-hour, as well as the Bailey Road at SR-4 Westbound Ramps for westbound right-turning vehicles from the off-ramp to northbound Bailey Road.

To assess the need for signalization of stop-controlled intersections, the Manual of Uniform Traffic Control published by the Federal Highway Administration, presents nine signal warrants. The Peak-Hour Volume Warrant and the Peak-Hour Delay Warrant was used in this study as a supplemental analysis tool to assess operations at the unsignalized intersections. The Bailey Road at Myrtle Drive intersection currently meets the peak-hour signal warrant during the AM peak-hour.

Based on the average and worst-movement LOS and peak-hour signal warrant assessment, neither unsignalized intersection is considered to operate deficiently in the existing condition based on the significance criteria.

As operations of SR-4 and the ramp meters at the San Marco Boulevard interchange can affect local street operations, additional field observations were conducted to document the effects of vehicle queue spillback from the ramp meters.

Congestion was not observed along the local street system prior to the ramp meters turning on at 6:00 a.m. Queues for the San Marco Boulevard westbound loop on-ramp exceeded the on-ramp storage by 6:30 a.m. By 7:00 a.m., queues for the on-ramp spilled back to the San Marco Boulevard/West Leland Road intersection and queues on West Leland Road did not dissipate until 8:15 a.m. The maximum length of queue was recorded at 7:45 a.m. and measured approximately 4,100 feet (measured from the ramp meter stop bar), which is past the intersection of West Leland Road at Tomales Bay Drive. After 8:15 a.m., queues were contained within the on-ramp storage, and by 8:30 a.m., queues at the ramp meter had largely dissipated (i.e., there were periods of no queue at the ramp meter).

Field observations indicate that the ramp meter is the controlling bottleneck for traffic getting on the highway when the ramp meter is active. While some vehicles merging onto the highway after the ramp meter had to wait to merge (due to congestion on westbound SR-4), the queues from the merge rarely extended to the ramp meter stop bar. Therefore, the Caltrans Performance Measurement System (PeMS) volume data for the ramp meter is indicative of vehicles served by the ramp meter.

Some motorists were observed to make atypical maneuvers on local streets to try to avoid the queue spillback from the San Marco Boulevard westbound loop on-ramp meter. The following movements were regularly observed to occur during periods when the ramp meter queue spilled back onto San Marco Boulevard and/or West Leland Road:

- Bypassing on-ramp queues and congestion along westbound SR-4 by using Evora Road to the Willow Pass Road (Concord) interchange
- Making illegal U-turns at Willow Pass Road/Evora Road to access the Willow Pass Road diagonal on-ramp

- Making illegal westbound right turns around the “pork chop” right turn island at the West Leland Road/San Marco Boulevard intersection

Vehicle queues were also calculated by Synchro 10.0. In the existing condition, average left-turn vehicle queues are contained within the available storage with the 95th percentile vehicle queue for some movements potentially extending beyond the available storage, including:

- Willow Pass Road at Evora Road/SR-4 Westbound Ramp (southbound movement, AM peak-hour)
- San Marco Boulevard at West Leland Road (eastbound left, westbound left, and westbound right, AM peak-hour)
- Bailey Road at West Leland Road (eastbound left, westbound left, westbound right, AM peak-hour; southbound left, PM peak-hour)
- Bailey Road at Concord Boulevard (westbound left, AM peak-hour; eastbound left, PM peak-hour)

Public Transit

The center of the project site is approximately 0.5-mile from the Pittsburg/Bay Point BART station that connects the area to the greater region via transit. The BART station also serves as a hub for TriDelta Transit, the local transit provider, as well as other transit services.

The BART system provides regional rail transit service connecting San Francisco, Alameda County, Contra Costa County, and parts of San Mateo County. From the Pittsburg/Bay Point station, direct connections to San Francisco and Antioch are provided, with transfers available to access the entire BART system. During peak periods, trains operate on less than 15-minute headways to/from San Francisco. Trains run to/from San Francisco with 15 to 20 minute headways during off-peak periods.

Nine of the 13 TriDelta Transit Routes serve the Pittsburg/Bay Point BART station (Routes 200, 201, 380, 387, 388, 389, 392, 394 and 396). Route 200 travels along the project frontage on West Leland Road, and connects the site to the BART station as well as to Martinez. Bus stops are provided on West Leland Road at Alves Ranch Road.

Bicycle Facilities

Bicycle facilities in Pittsburg include the following:

- Bike paths (Class I)—Paved trails that are separated from roadways. These facilities are typically shared with pedestrians, although bicycles must yield to pedestrians.
- Bike lanes (Class II)—Lanes on roadways designated for use by bicycles through striping, pavement legends, and signs. There may or may not be parking allowed on the roadway.
- Bike routes (Class III)—Designated roadways for bicycle use by signs only; may or may not include additional pavement width for cyclists.

Class II bicycle facilities are provided on West Leland Road through the study area, as well as on Alves Ranch Road and Tomales Bay Drive, south of West Leland Road. Class II facilities are also provided on Bailey Road between Willow Pass Road and just south of the City limit, and on San Marco Boulevard between West Leland Road and Willow Pass Road. There are also several Class I trails in the area, including the Delta DeAnza Regional Trail, that can be accessed near the BART station at Bailey Road, and a Class I trail along the west side of San Marco Boulevard.

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals. Pedestrian facilities are provided on public roadways adjacent to the site where development has occurred as well as for a segment along the project frontage. In the immediate project vicinity, marked crosswalks, push buttons and signals are provided on three legs (north, south, and west) of the signalized intersection of West Leland Road at Alves Ranch Road. No pedestrian crossing of West Leland Road is provided at Tomales Bay Drive. The next closest pedestrian crossing of West Leland Road is at the BART station exit driveway.

3.5.3 - Regulatory Framework

State

California Department of Transportation

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State Highway facilities (Caltrans 2002); however, Caltrans recognizes that achieving LOS C/LOS D may not always be feasible.

For the Caltrans highway facilities being studied, the operational standards and significance criteria are established by the CCTA acting as the designated congestion management agency (CMA) representing the jurisdictions of Contra Costa County. As the acting CMA, the CCTA establishes the traffic LOS standards for all State highway facilities in Contra Costa County, which supersede the general Caltrans operational standard for all State highways in the study area.

Regional

Contra Costa Transportation Authority

- CCTA is the CMA for Contra Costa County. CCTA oversees the East County Action Plan for Routes of Regional Significance, which establishes Multimodal Transportation Service Objectives for SR-4: Delay Index of less than 2.5 (<2.5)
- HOV usage greater than 600 vehicles per lane per peak-hour in peak direction (>600 vehicles/lane/peak-hour)

Local

City of Pittsburg

General Plan

The City of Pittsburg General Plan sets forth the following transportation-related goals and policies that are relevant to the 2018 Project:

- **Goal 7-G-1:** Achieve service level standards for roadway intersections that are based on the roadway’s classification and location shown in Figure 7-2.
- **Goal 7-G-2:** Work with Caltrans and the Contra Costa Transportation Authority to achieve timely construction of programmed freeway and interchange improvements.
- **Goal 7-G-3:** Coordinate circulation system plans with other jurisdictions’ and agencies’ plans, including Antioch and Concord, the Contra Costa Transportation Authority, and Caltrans.
- **Goal 7-G-4:** Work with the Contra Costa Transportation Authority to manage morning commute traffic from East to Central Contra Costa County by studying and implementing arterial metering management plans.
- **Goal 7-G-5:** Provide adequate capacity on arterial roadways to meet LOS standards and to avoid traffic diversion to local roadways or the freeway. As congestion increases on State Route 4, monitor and evaluate the need to implement neighborhood traffic management controls on local streets to eliminate or minimize the impact of diverted traffic.
- **Goal 7-G-6:** Locate high traffic-generating uses so that they have direct access or immediate secondary access to arterial roadways.
- **Goal 7-G-7:** Complete arterial roadway improvements required to mitigate traffic impacts of an approved project before the project is fully occupied. Arterial improvements should be completed by creating funding sources, which include but are not limited to Traffic Mitigation Fees, Development Agreements, and Assessment Districts.
- **Policy 7-P-1:** Require mitigation for development proposals that are not part of the Traffic Mitigation Fee program which contribute more than one percent of the volume to an existing roadway or intersections with inadequate capacity to meet cumulative demand. Development projects that contribute to future traffic congestion on existing roadways shall provide mitigation to ensure adequate future capacities. Traffic analysis of development plans will determine the proportion of cumulative impact each project is creating.
- **Policy 7-P-2:** Use the adopted Regional and Local Transportation Impact Mitigation Fee ordinances to ensure that all new development pays an equitable pro-rata share of the cost of transportation improvements. Review the Traffic Impact Mitigation Fee schedule annually and update every five years at a minimum.
- **Policy 7-P-3:** Review and update the City’s Engineering Design Standards for each functional roadway classification, according to Table 7-1. Roadway standards are illustrated in the City’s Engineering Design Standards for typical midblock applications. Additional right-of-way may be needed for turn lanes at some intersection approaches.
- **Policy 7-P-4:** Require that all traffic studies be conducted by professional transportation consultants selected by the Planning and Building and Engineering Departments, with the City acting as the lead agency. Ensure that all costs associated with the traffic study are paid by the applicant.
- **Policy 7-P-6:** Ensure that all Regional Routes of Significance within the City maintain the following traffic LOS standards (applicable to non-freeway routes and routes not subject to a Traffic Management Program):
 - LOS mid D (peak-hour volume to capacity ratio less than or equal to 0.85) at intersections along major arterials, except for intersections along Bailey Road;
 - LOS high E (peak-hour volume to capacity ratio less than or equal to 0.99) at intersections along Bailey Road between West Leland Road and SR-4; and

- LOS mid E (peak-hour volume to capacity ratio less than or equal to 0.95) at intersections on Kirker Pass Road.
- **Policy 7-P-7:** Endeavor to implement Transportation Element improvements prior to deterioration in levels of service below those set forth in Goal 7-G-1. Development approvals should require reasonable demonstration that traffic improvements necessary to serve the development will be in place in time to accommodate trips generated by the project.
- **Policy 7-P-8:** Ensure that all non-Regional Routes within the City (not designated as Routes of Regional Significance in Figure 7-2) maintain the following traffic LOS standards based on their location in rural, semi-rural, suburban, urban or downtown areas, as designated in Figure 7-2:
 - Rural—LOS low C (peak-hour volume to capacity ratio less than or equal to 0.74)
 - Semi-rural—LOS high C (peak-hour volume to capacity ratio less than or equal to 0.79)
 - Suburban—LOS low D (peak-hour volume to capacity ratio less than or equal to 0.84)
 - Urban—LOS high D (peak-hour volume to capacity ratio less than or equal to 0.89)
 - Downtown—LOS high D (peak-hour volume to capacity ratio less than or equal to 0.89)Specific improvements should be identified and implemented on the basis of detailed traffic studies or Environmental Impact Reports. Improvements may include intersection approach lane expansion, related channelization improvements and traffic signal installations.
- **Policy 7-P-10:** Require mitigation for development proposals which result in projected parking demand that would exceed the proposed parking supply on a regular and frequent basis.
- **Policy 7-P-11:** Maximize the carrying capacity of arterial roadways by controlling the number of intersections and driveways, minimizing residential access, implementing Transportation Systems Management measures, and requiring sufficient on-site parking to meet the needs of each project (see also Table 7-1).

Additional guidelines for arterial access include providing smooth ingress/egress to development. This includes designing parking areas so that traffic turning into the parking areas does not stack up on the arterial roadway; combining driveways to serve small parcels; and maintaining adequate distance between driveways and intersections to permit efficient traffic merges. In the built environment, roadway right-of-way may not be available to increase arterial capacity. Therefore, improving the efficiency of existing arterials through Transportation Systems Management (TSM) measures should be one of the first considerations to meet level of service standards. TSM measures include signal coordination, channelization and signal improvements at intersections, and implementation of new traffic control technology.
- **Policy 7-P-12:** Continue to collect fees, plan and design for the future construction of Buchanan Bypass. Ensure preparation of a feasibility and environmental impact study to determine the precise alignment, costs, mitigation measures, and impacts on adjacent uses.
- **Policy 7-P-13:** Upgrade or extend the hillside access routes from Bailey Road, Buchanan Road, Kirker Pass Road, and proposed San Marco Boulevard, as development potential warrants.
- **Policy 7-P-14:** Increase access to alternative north-south routes providing connection to SR-4, other than Railroad Avenue.
- **Policy 7-P-16:** Continue to collect fees for the extension of West Leland Road to Willow Pass Road, subject to the Traffic Mitigation Fee program. As established by nexus, require new development adjacent to the extension to dedicate right-of-way and construct or fund new intersections and frontage improvements.

- **Policy 7-P-19:** Rebuild the interchange/overpass between Willow Pass Road, Range Road, North Parkside Drive, and the BNSF Railroad tracks for safe and efficient movement of auto and bicycle traffic.
- **Policy 7-P-20:** Encourage motorists to use SR-4 for the peak-hour commute, rather than using arterial streets in Concord and other East County cities.
- **Policy 7-P-21:** Design local residential streets and implement traffic-control measures to keep traffic below 5,000 vehicles per day.
- **Policy 7-P-22:** Avoid adding traffic roadways carrying volumes above the standards, and consider traffic control measures where perceived nuisance is severe.
- **Policy 7-P-23:** Develop procedures and guidelines to mitigate neighborhood traffic impacts in areas where traffic speeds or volumes exceed posted speed limits or standards established above. Measures that may be considered include:
 - Installation of way-finding signs on arterial routes that encourage motorists to use routes that do not pass through residential areas.
 - Operational changes such as signalization, turn lanes, and extended turning bays on arterial streets that encourage their use as intercommunity connectors.
 - Traffic calming measures such as curb extensions or gateway features at intersections on streets leading into residential areas to inform motorists that they are entering a neighborhood area.
 - Community educational and awareness programs to promote selection of routes within the City that do not pass through residential areas.
- **Policy 7-P-24:** Continue to designate appropriate truck routes and discourage unnecessary through traffic in residential areas.

3.5.4 - Methodology

The approach throughout this Draft SEIR is to compare what was previously studied in the 2004 EIR to the 2018 Project to confirm if any additional analysis is necessary, in this Draft SEIR context, to ensure the 2004 EIR is adequate.

Fehr & Peers prepared a TIA that evaluated potential impacts of the 2018 Project on transportation facilities and compared these impacts to those that were identified in the 2004 EIR. The complete assessment is provided in Appendix D of this Draft SEIR. The methodology of the assessment is described as follows.

Project Trip Generation

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding roadway system. Estimates are created for the daily condition and for the peak 1-hour period during the morning and evening commute when traffic volumes on the adjacent streets are typically the highest. Project trip generation was estimated using rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition), as presented in Table 3.5-4.

Table 3.5-4: Vehicle Trip Generation Estimates for 2018 Project

Use	Size	Weekday						
		Daily	AM Peak-hour			PM Peak-hour		
			In	Out	Total	In	Out	Total
Single Family Homes ¹	346 units	3,080	60	180	240	203	119	322
Accessory Dwelling Units ²	10 units	70	1	4	5	4	2	6
Grocery Store ³	40,000 square feet	4,270	92	61	153	188	181	369
Neighborhood Shopping Center ⁴	100,000 square feet	3,780	58	36	94	183	198	381
Less Pass-by Supermarket ⁵		-1,710	—	—	—	-75	-72	-147
Less Pass-by Neighborhood Retail ⁶		-1,280	—	—	—	-63	-67	-130
Net Vehicle Trip Generation		8,370	211	281	492	447	368	815

Notes:

- ¹ ITE land use category 210—Single-Family Homes (Adjacent Streets, 7-9A, 4-6P):
Weekday Daily: (T) = 9.44 (X)
AM Peak-hour: T = 0.74(X); Enter = 25 percent; Exit = 75 percent
PM Peak-hour: T = 0.99 (X); Enter = 63 percent; Exit = 37 percent
Trip generation results reflect 6 percent reduction to account for transit use.
 - ² ITE land use category 220—Multi-family Housing (Adjacent Streets, 7-9A, 4-6P):
Weekday Daily: (T) = 7.32 (X)
AM Peak-hour: T = 0.46 (X); Enter = 23 percent; Exit = 77 percent
PM Peak-hour: T = 0.56 (X); Enter = 63 percent; Exit = 37 percent
Trip generation results reflect 6 percent reduction to account for transit use.
 - ³ ITE land use category 850—Grocery Store (Adjacent Streets, 7-9A, 4-6P):
Weekday Daily: (T) = 106.78(X)
AM Peak-hour: T = 3.82 (X); Enter = 60 percent; Exit = 40 percent
PM Peak-hour: T = 9.24 (X); Enter = 51 percent; Exit = 49 percent
 - ⁴ ITE land use category 820—Shopping Center (Adjacent Streets, 7-9A, 4-6P):
Weekday Daily: (T) = 37.75(X)
AM Peak-hour: T = 0.94(X); Enter = 62 percent; Exit = 38 percent
PM Peak-hour: T = 3.81 (X); Enter = 48 percent; Exit = 52 percent
 - ⁵ Reflects a 36 percent pass-by reduction for grocery store only trips.
 - ⁶ Reflects a 34 percent pass-by reduction for neighborhood retail trips.
- Source: Trip Generation Manual (10th Edition); ITE 2017; Fehr & Peers 2018.

Given the 2018 Project’s proximity to the Pittsburg/Bay Point BART station and the likelihood of future residents utilizing the BART system without using a private vehicle to access the station, the trip generation estimates considered a 6 percent transit reduction for the proposed residential uses, consistent with the reduction factor used in the 2004 Final EIR. It is likely that many people will choose to live in this development due to its proximity to BART and will use BART more frequently for commute and other trip purposes than Pittsburg residents that live at a greater distance from BART. However, to present a conservative assessment of potential project impacts on the

surrounding transportation system, the same reduction assumed in the 2004 Final EIR was considered in this assessment.

At retail establishments, such as the one that could be developed as part of the commercial component, driveway traffic comprises: (1) new traffic generated by the 2018 Project, (2) traffic that would otherwise already be on the adjacent roadways but the driver decides to stop at the site (e.g., to purchase an item on their way home from work), and (3) traffic on other nearby roadways, but the driver decides to take a short detour to stop at the site. The trips in Item 2 are referred to as “pass-by” trips and the trips in Item 3 are referred to as “diverted-link” trips.

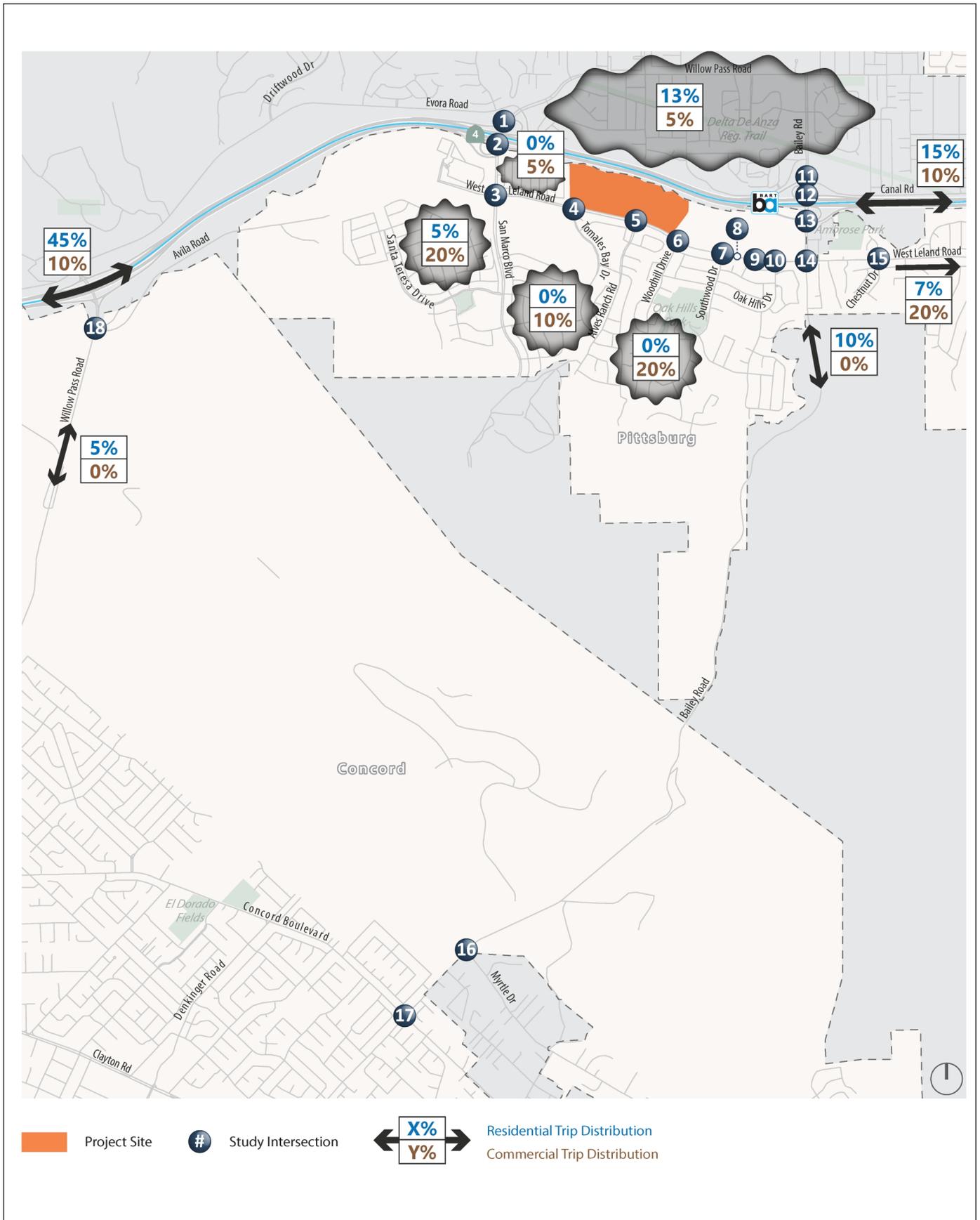
Information contained in the ITE Trip Generation Handbook and surveys of similar uses was used to estimate pass-by and diverted-link trips for the grocery store and general retail components of the 2018 Project. For grocery stores, the average pass-by rate is 36 percent, and the average diverted linked trip rate is 32 percent during PM peak-hour (limited data is available for the AM peak-hour). In other words, at a grocery store, approximately, 68 percent of the traffic entering and exiting the site is already on the surrounding roadway system—not a new vehicle trip to the area. For general retail, the average pass-by rate is 34 percent, and the average diverted linked trip rate is 16 percent during PM peak-hour (limited data is available for the AM peak-hour). In other words, at a typical shopping center, approximately 50 percent of the traffic entering and exiting the site is already on the surrounding roadway system.

For purposes of a conservative assessment, a pass-by reduction of 36 percent was applied for the grocery store and a 34 percent reduction was applied to the general retail portion of the project during the PM peak-hour and on a daily basis.

Although there is likely to be interaction between the retail and residential components of the 2018 Project, no additional trip reductions were taken to provide a conservative assessment of potential project impacts. The resulting 2018 Project trip generation estimates are presented in Table 3.5-4, which shows that the 2018 Project is expected to generate approximately 8,370 weekday daily trips, including 492 AM peak-hour and 815 PM peak-hour trips. This is compared to 7,550 weekday daily, 634 morning peak-hour and 789 evening peak-hour trips from the original Alves Ranch project evaluated in the 2004 EIR.

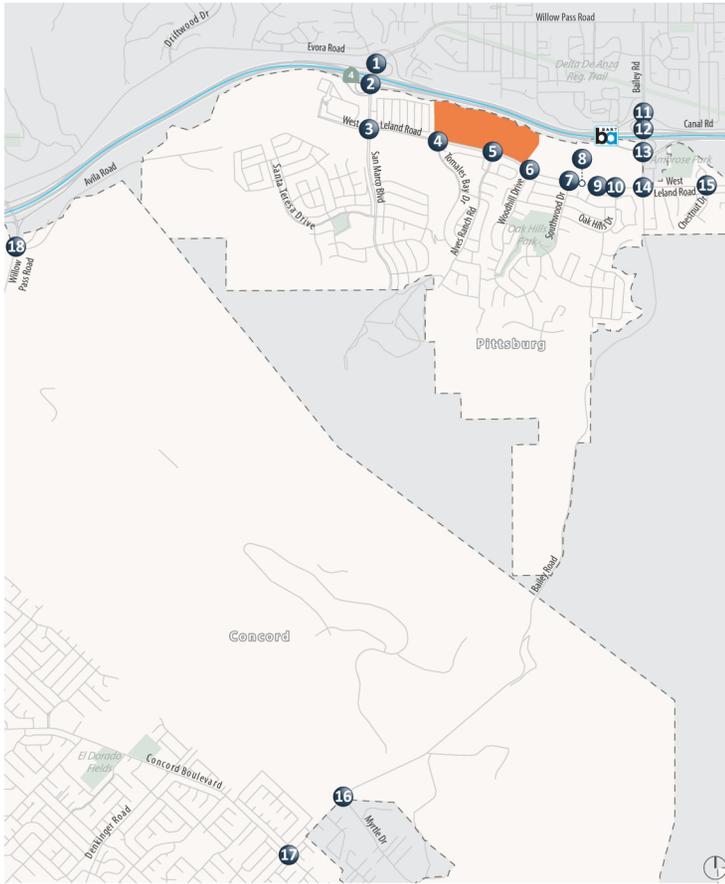
Project Trip Distribution and Assignment

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. Estimates of regional project trip distribution were developed based on existing travel patterns in the area, a select zone analysis using the CCTA travel demand model, and the location of complementary land uses, such as schools, employment centers, and retail/recreational opportunities. Separate estimates were developed for the residential and commercial portions of the 2018 Project, as they are likely to have different trip distribution patterns. The resulting trip distribution percentages are shown on Exhibit 3.5-4. 2018 Project trips were then assigned to the roadway network as shown on Exhibit 3.5-5 and 3.5-6.



Source: Fehr & Peers, November 2018.

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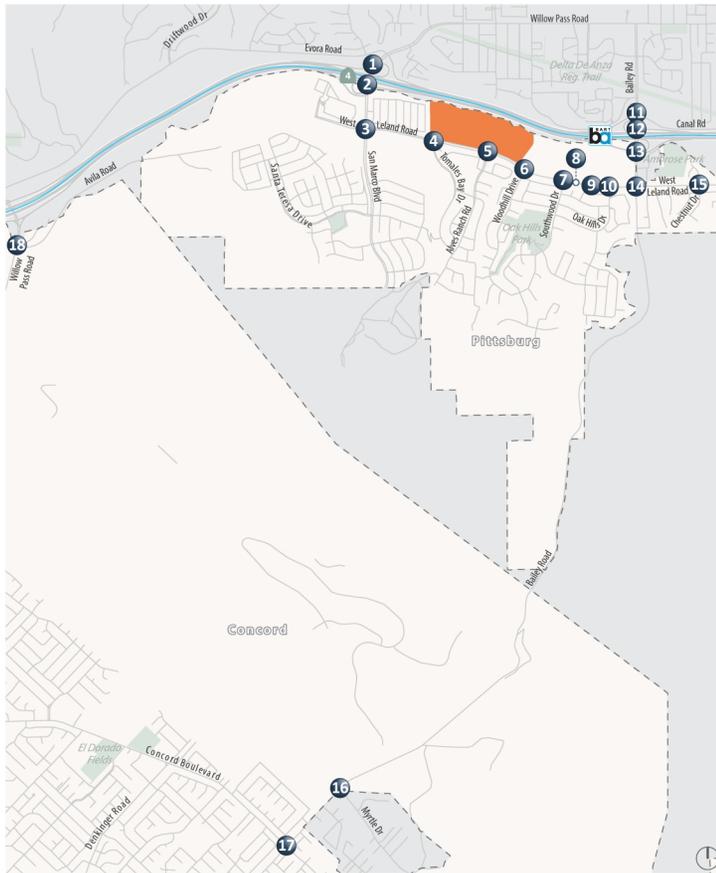


1. Willow Pass Rd/Evora Rd/SR4 WB Ramp 	2. San Marcos Blvd/SR 4 EB Ramps 	3. San Marco Blvd/W Leland Rd 	4. Tomales Bay Dr/W Leland Rd 	5. Alves Ranch Rd/W Leland Rd
6. Woodhill Dr/W Leland Rd 	7. Southwood Dr/W Leland Rd 	8. BART Exit/W Leland Rd 	9. BART Entrance/W Leland Rd 	10. Oak Hills Dr/W Leland Rd
11. Bailey Rd/SR4 WB On-Ramp/Canal Rd 	12. Bailey Rd/SR4 WB Off-Ramp 	13. Bailey Rd/BART Entrance/SR4 EB Ramps 	14. Bailey Rd/W Leland Rd 	15. Chestnut Dr/W Leland Rd
16. Bailey Rd/Myrtle Dr 	17. Bailey Rd/Concord Blvd 	18. Willow Pass Rd/Avila Rd 		

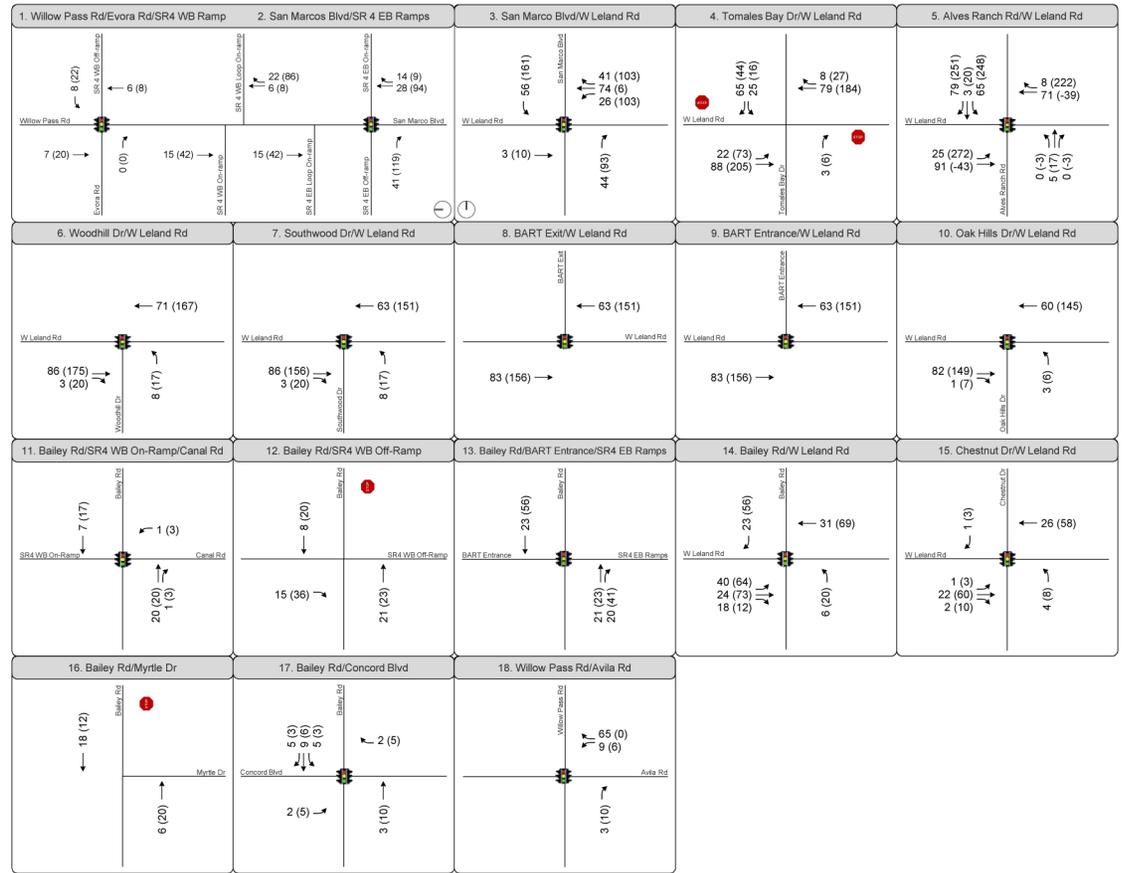
XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign
 Project Site Study Intersection

Source: Fehr & Peers, November 2018.

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XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign
 Project Site Study Intersection



Source: Fehr & Peers, November 2018.

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3.5.5 - Thresholds of Significance

According to the *CEQA Guidelines'* Appendix G Environmental Checklist, to determine whether transportation impacts are significant environmental effects, the following questions are analyzed and evaluated. Would the 2018 Project:

- a) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency (CMA) for designated roads or highways.
- b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?
- c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?
- d) Result in inadequate emergency access?

In the context of checklist item (a), the City of Pittsburg General Plan, and the CCTA East County Action Plan, the following thresholds apply:

Signalized Intersections—Project-related operational impacts on the signalized study intersections in the City of Pittsburg are considered significant if:

1. Project-related traffic causes the LOS rating to deteriorate from Low-LOS D (50 seconds) or better to LOS E or F, or from LOS E to LOS F for intersections not along a Regional Route of Significance (intersections 1 and 2) in a Suburban setting as designated by the City of Pittsburg General Plan;
2. Project-related traffic causes the LOS rating to deteriorate from LOS D (55-seconds) or better to LOS E or F, or from LOS E to LOS F for intersections along Regional Routes of Significance (intersections 3-10, 15), except for intersections on Bailey Road where LOS E is acceptable (intersections 11-14, 16 and 17);
3. Project-related traffic causes the LOS rating to deteriorate from LOS E (80-seconds) or better to F for City of Concord intersections along Transit Routes, which include Willow Pass Road (intersection 18);
4. For intersections already operating at an unacceptable LOS without the project it is considered a significant impact of the project increase the average intersection delay by more than 5 seconds.

Unsignalized Intersections—Project-related operational impacts on unsignalized intersections are considered significant if:

1. Project generated traffic causes the worst-case movement (or average of all movements for all-way stop-controlled intersections) to deteriorate from LOS E or better to LOS F, and the signal warrant is met.

2. For intersections already operating at an unacceptable LOS without the project it is considered a significant impact if:
 - Project traffic results in satisfaction of the peak-hour volume traffic signal warrant;
 - Project traffic increases the minor movement delay by more than 30 seconds; or
 - Where the peak-hour volume signal warrant is met without project traffic and delay cannot be measured, the project increases traffic by 10 or more vehicles per lane on the controlled approach.

Highway System—For the Caltrans highway facilities being studied, the operational standards and significance criteria are established by the CCTA acting as the designated CMA representing the jurisdictions of Contra Costa County. As the acting CMA, the CCTA establishes the traffic LOS standards for all State highway facilities in Contra Costa County, which supersede the general Caltrans operational standard for all State highways.

For highway segments, the *East County Action Plan for Routes of Regional Significance*, CCTA has established the delay index as the MTSO for SR-4 through the study area. The delay index is the ratio of travel time on a facility divided by the travel times that occur during non-congested free-flow periods. Should the delay index exceed 2.5 during either the AM or PM peak period, highway operations would be considered deficient. This would equate to peak-hour travel taking 2.5 times as long as off-peak travel or an average travel speed below 26 miles per hour assuming a non-congested free-flow speed of 65 miles per hour.

For project impact assessment purposes, an impact is significant if the project adds traffic to a mixed flow segment projected to have a delay index over 2.5 without project traffic, or if the project adds traffic to an HOV segment projected to meet or exceed the desired volume without project traffic.

The number of vehicles traveling in the HOV lane is also an MTSO. However, since the *Action Plan* sets a goal of a minimum of 600 vehicles per lane in the peak-hour using the HOV lanes, no significance criteria is identified for HOV lanes in this evaluation.

Transit System—The project would create a significant impact related to transit service if either of the following criteria are met:

- The project generates a substantial increase in transit riders that cannot be adequately served by existing transit services; or
- The project conflicts with existing or planned transit facilities.

Bicycle System—The project would create a significant impact related to the bicycle system if any of the following criteria are met:

- The project design would not provide or would eliminate bicycle facilities that connect to the area circulation system, or
- The project conflicts with existing or planned bicycle facilities; or
- The project design would create hazardous conditions for bicyclists.

Pedestrian System—The project would create a significant impact related to the pedestrian system if any of the following criteria are met:

- The project design would not provide or would eliminate pedestrian facilities to connect to the area circulation system, or
- The project design would create hazardous conditions for pedestrians, or
- The project conflicts with existing or planned pedestrian facilities.

3.5.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the 2018 Project and provides feasible mitigation measures where necessary.

Existing Plus 2018 Project Traffic Conditions

The 2004 EIR did not provide an evaluation of Existing Plus Project conditions as that scenario was not required under CEQA best practices at the time that evaluation was completed. This updated analysis includes an evaluation of Existing Plus Project conditions to reflect evolving CEQA Guidelines.

Existing Plus Project Traffic Conditions

Impact TRANS-1: The 2018 Project may contribute to unacceptable intersection operations under Existing Plus Project Conditions.

Impact Analysis

The 2018 Project traffic volumes on Exhibit 3.5-5 were added to the existing traffic volumes from Exhibit 3.5-2 to estimate the Existing with 2018 Project traffic volumes, as shown on Exhibit 3.5-7. No roadway improvements were assumed for the evaluation of Existing with 2018 Project conditions except for the improvements proposed as part of the 2018 Project at the West Leland Road at Alves Ranch Road intersection, which would be modified to provide two left-turn lanes and a through-right shared lane on both the northbound and southbound approaches. As part of this modification, a new crosswalk would be provided across the east leg of the intersection, and the traffic signal would be modified to accommodate a new pedestrian phase and the changed lane geometries on the north and south legs of the intersection.

The Existing with 2018 Project analysis results are presented in Table 3.5-5 based on the traffic volumes and intersection configurations presented on Exhibit 3.5-7. Table 3.5-5 also includes the operations results for Existing conditions. The addition of 2018 Project traffic would increase average delay at the signalized study intersections and would worsen already deficient operations at the West Leland Road at San Marco Boulevard intersection. No signalized intersections that are currently operating within the City's LOS standard are projected to degrade beyond the established LOS standard with the addition of 2018 Project traffic in the existing condition.

Table 3.5-5: Existing With 2018 Project Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Level of Service Standard	Existing		Existing with 2018 Project		Significant Impact?
				Delay ²	LOS	Delay ²	LOS	
1. SR-4 Westbound Ramps at San Marco Boulevard/Evora Road	Signal	AM PM	Low-LOS D (50 seconds)	37 ³ 12	D B	39 12	D B	No
2. SR-4 Eastbound Ramps at San Marco Boulevard	Signal	AM PM	Low-LOS D (50 seconds)	7 8	A A	8 10	A B	No
3. West Leland Road at San Marco Boulevard	Signal	AM PM	LOS D (55-seconds)	119 36	F D	173 42	F D	Yes ; average delay increase of more than 5-seconds
4. West Leland Road at Tomales Bay Drive	SSSC	AM PM	LOS D (55-seconds)	0 (11) 0 (11)	A (B) A (B)	2 (29) 1 (13)	A (D) A (B)	No
5. West Leland Road at Alves Ranch Road	Signal	AM PM	LOS D (55-seconds)	9 12	A B	22 35	C C	No
6. West Leland Road at Woodhill Drive	Signal	AM PM	LOS D (55-seconds)	14 11	B B	11 7	B A	No
7. West Leland Road at Southwood Drive	Signal	AM PM	LOS D (55-seconds)	14 17	B B	15 17	B B	No
8. West Leland Road at BART Exit	Signal	AM PM	LOS D (55-seconds)	8 12	A B	8 11	A B	No
9. West Leland Road at BART Entrance	Signal	AM PM	LOS D (55-seconds)	8 10	A A	8 10	A A	No
10. West Leland Road at Oak Hills Drive	Signal	AM PM	LOS D (55-seconds)	12 18	B B	12 18	B B	No
11. Bailey Road at Canal Road	Signal	AM PM	LOS E (80-Seconds)	37 16	D B	37 16	D B	No

Table 3.5-5 (cont.): Existing With 2018 Project Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Level of Service Standard	Existing		Existing with 2018 Project		Significant Impact?
				Delay ²	LOS	Delay ²	LOS	
12. Bailey Road at SR-4 Westbound Ramps	SSSC	AM PM	LOS E (80-Seconds)	1 (18) 17 (140)	A (C) C (F)	1 (19) 18 (148)	A (C) C (F)	No; signal warrants are not met and side-street delay does not increase by more than 30-seconds
13. Bailey Road at SR-4 Eastbound Ramps	Signal	AM PM	LOS E (80-Seconds)	16 23	B C	16 23	B C	No
14. West Leland Road at Bailey Road	Signal	AM PM	LOS E (80-Seconds)	38 25	D C	43 28	D C	No
15. West Leland Road at Chestnut Drive	Signal	AM PM	LOS D (55-seconds)	28 13	C B	29 14	C B	No
16. Bailey Road at Myrtle Drive	SSSC	AM PM	LOS E (80-Seconds)	6 (43) 2 (22)	A (E) A (C)	6 (46) 2 (23)	A (E) A (C)	No; side-street delay does not increase by more than 30-seconds
17. Bailey Road at Concord Boulevard	Signal	AM PM	LOS E (80-Seconds)	42 43	D D	45 36	D D	No
18. Willow Pass Road at Avila Road	SSSC	AM PM	LOS E (80-Seconds)	1 (13) 1 (37)	A (B) A (E)	1 (13) 1 (37)	A (B) A (E)	No

Notes:

¹ Signal = signalized intersection; SSSC = side-street stop-control

² Average intersection delay is calculated for all signalized intersections using the HCM method for vehicles.

³ Delay presented here does not consider delay associated with the westbound SR-4 on-ramp ramp-metering.

Source: Fehr & Peers 2018

At the Bailey Road at Myrtle Drive and Bailey Road at SR-4 Westbound Ramps intersections, the addition of 2018 Project traffic would cause already deficient side-street conditions to worsen, but would not result in a significant impact based on the applicable significance criteria.

In the Existing Plus 2018 Project condition, average left-turn vehicle queues are contained within the available storage with the 95th percentile vehicle queue for some movements potentially extending beyond the available storage that did not extend beyond the available storage in the existing condition, including:

- San Marco Boulevard at West Leland Road (westbound left, PM peak-hour)
- Bailey Road at West Leland Road (eastbound left, PM peak-hour)

For signalized intersections that are projected to operate at LOS D or better during the AM and PM peak-hours, it is expected that vehicle queue spillback can be managed through signal timing adjustments, which the City of Pittsburg periodically undertakes to optimize travel flow along major corridors, as described in the City's Capital Improvement Program project (S-7: 2018/19 Traffic Signal Modification Project).

One off-site intersection impact was identified in the Existing condition at the West Leland Road at San Marco Boulevard intersection.

Impacts and Mitigation

West Leland Road at San Marco Boulevard

The West Leland Road at San Marco Boulevard intersection operates at a deficient LOS F during the AM peak-hour prior to the addition of 2018 Project traffic in the Existing condition. The addition of 2018 Project traffic would worsen operations and increase average delay by more than 5 seconds. Based on the significance criteria, this is considered a significant impact.

To mitigate this impact, Mitigation Measure TRANS-1 requires the 2018 Project applicant to contribute its fair share to intersection improvements that would result in acceptable operations, which could include widening the northbound San Marco Boulevard north of West Leland Road to allow the westbound right movement to operate as a free tuning movement. This improvement is identified in the City's Capital Improvement Program as Project ST-9. The project applicant previously paid transportation impact fees for improvements at the intersection associated with development of the entitled project. With implementation of this measure, intersection operations would improve to an acceptable level, reducing the impact to a less-than significant level, as shown in Table 3.5-6. Additionally, as required by Mitigation Measure TRANS-4, the 2018 Project applicant shall pay the applicable regional transportation impact fees to the East Contra Costa Regional Fee and Financing Authority (ECCRFFA) that would fund construction of additional improvements along the SR-4 corridor as well as the extension of West Leland Road to Willow Pass Road. However, as it is uncertain if the ramp meter improvements could be constructed and the timing of the West Leland Road extension to Willow Pass Road is unknown, this impact would remain significant and unavoidable.

Table 3.5-6: Existing with 2018 Project with Mitigation Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Existing		Existing with 2018 Project		Existing with 2018 Project with Mitigation	
			Delay ²	LOS	Delay ²	LOS	Delay ²	LOS
West Leland Road at San Marco Boulevard	Signal	AM	119	F	173	F	31	C
		PM	36	D	42	D	39	D

Notes:
¹ Signal = signalized intersection
² Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
Source: Fehr & Peers 2018

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure TRANS-1a and Mitigation Measure TRANS-4.

MM TRANS-1a Prior to issuance of building permits, the 2018 Project applicant shall pay applicable Local Traffic Mitigation Fee to the City of Pittsburg, which could be used to construct intersection improvements that would result in acceptable operations, which could include widening the northbound San Marco Boulevard north of West Leland Road to allow the westbound right movement to operate as a free tuning movement.

Level of Significance After Mitigation

Significant unavoidable impact.

Near-Term Traffic Conditions

Impact TRANS-2: The 2018 Project may contribute to unacceptable intersection operations under Near-Term Conditions.

Impact Analysis

The Near-Term scenario reflects existing traffic counts plus traffic from approved and pending developments that are expected to be completed and occupied upon 2018 Project completion. Near-Term conditions without and with the 2018 Project are evaluated.

Near-Term Forecasts

The *Project Pipeline* list prepared by the City of Pittsburg at the time the project’s Notice of Preparation (NOP) was issued were reviewed to identify developments to include in this scenario. Approved and pending developments that could generate significant traffic through the study area are summarized in Table 3.5-7 and their locations shown on Exhibit 3.5-8. The existing traffic counts were also increased by 5 percent to account for traffic growth from projects outside the immediate study area that could add through traffic to the area, as well as to account for low-trip generating

projects in the study area. This factor was derived based on a review of travel growth trends from the CCTA travel demand model.

Near-Term project vehicle trip generation was estimated using trip generation rates and equations for the proposed land uses from ITE’s Trip Generation Manual (10th Edition). The results are provided in Appendix F. Traffic generated by approved and pending developments was added to the existing traffic volumes to provide the basis for the Near-Term without 2018 Project analysis, as presented on Exhibit 3.5-9. 2018 Project traffic volumes were added to the Near-Term without 2018 Project forecasts to estimate Near-Term with 2018 Project volumes at the study intersections, as presented on Exhibit 3.5-10.

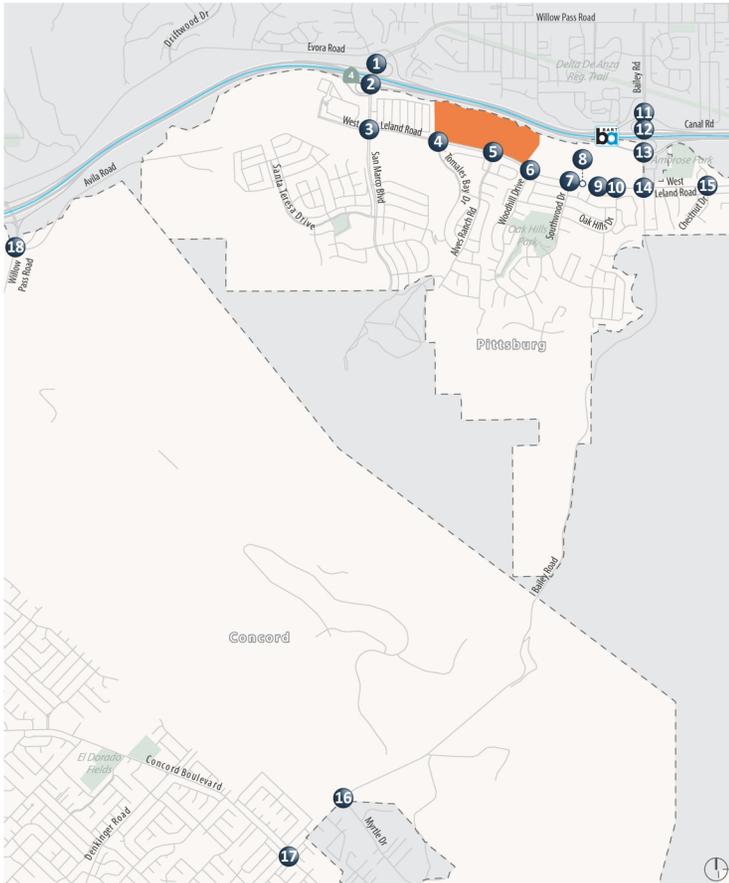
Table 3.5-7: Approved and Pending Projects Summary

Map Location	Project Name	Size	Land Use	Status
1	San Marco Village C	459 dwelling units	Multi-Family Homes	Needs design review approval; 339 units currently planned for but area can accommodate additional units; additional 120 units from San Marco Village M assumed in analysis (see below).
2	San Marco Village D	171 dwelling units	Single-Family Homes	Under Construction
3	San Marco Village E	107 dwelling units	Single-Family Homes	23 built; 84 remaining
4	San Marco Village F	100 dwelling units	Single-Family Homes	75 built; 25 remaining
5	San Marco Village M	300 dwelling units	Multi-Family Homes	Approved; previously planned for 420 units. Excess units assumed in Village C to maintain development totals in area.
6	San Marco Village N	64 dwelling units	Single-Family Homes	Needs design review approval
7	San Marco Village O	115 dwelling units	Single-Family Homes	Needs design review approval

Source: Fehr & Peers 2018

Near-Term Roadway Assumptions

No roadway improvements at any of the study intersections were considered in the evaluation of near-term conditions, except for the improvements at the intersection of West Leland Road at Alves Ranch Road that are proposed as part of the project. The extension of West Leland Road to Avila Road was not considered in the analysis of near-term conditions as full funding for the improvement has not yet been identified and the timing of completion cannot be assured in the near-term time horizon.



1. Willow Pass Rd/Evora Rd/SR4 WB Ramp 	2. San Marcos Blvd/SR 4 EB Ramps 	3. San Marco Blvd/W Leland Rd 	4. Tomales Bay Dr/W Leland Rd 	5. Alves Ranch Rd/W Leland Rd
6. Woodhill Dr/W Leland Rd 	7. Southwood Dr/W Leland Rd 	8. BART Exit/W Leland Rd 	9. BART Entrance/W Leland Rd 	10. Oak Hills Dr/W Leland Rd
11. Bailey Rd/SR4 WB On-Ramp/Canal Rd 	12. Bailey Rd/SR4 WB Off-Ramp 	13. Bailey Rd/BART Entrance/SR4 EB Ramps 	14. Bailey Rd/W Leland Rd 	15. Chestnut Dr/W Leland Rd
16. Bailey Rd/Myrtle Dr 	17. Bailey Rd/Concord Blvd 	18. Willow Pass Rd/Avila Rd 		

XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign
 Project Site Study Intersection

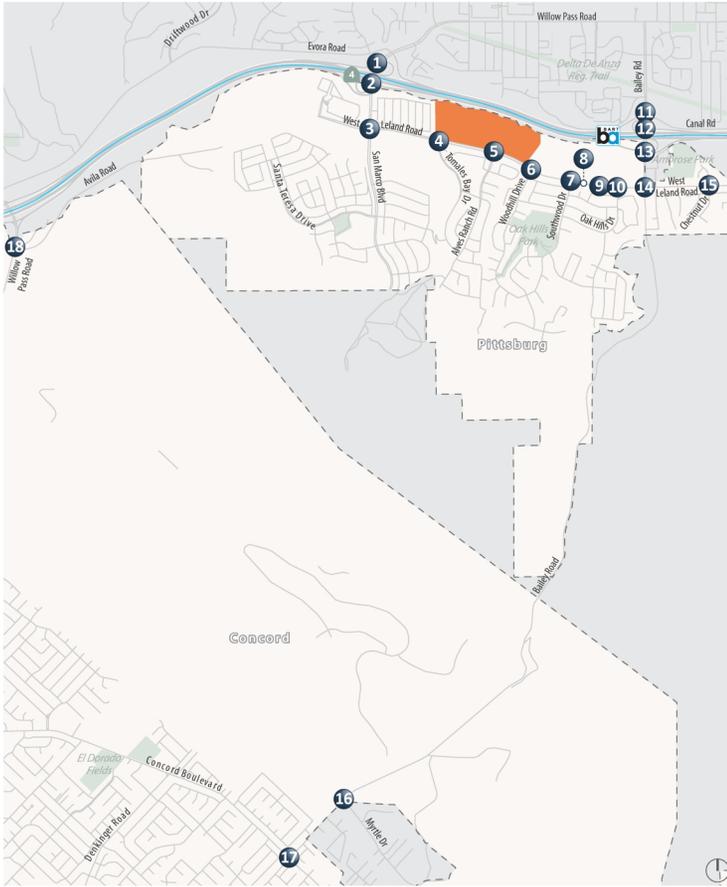
Source: Fehr & Peers, November 2018.

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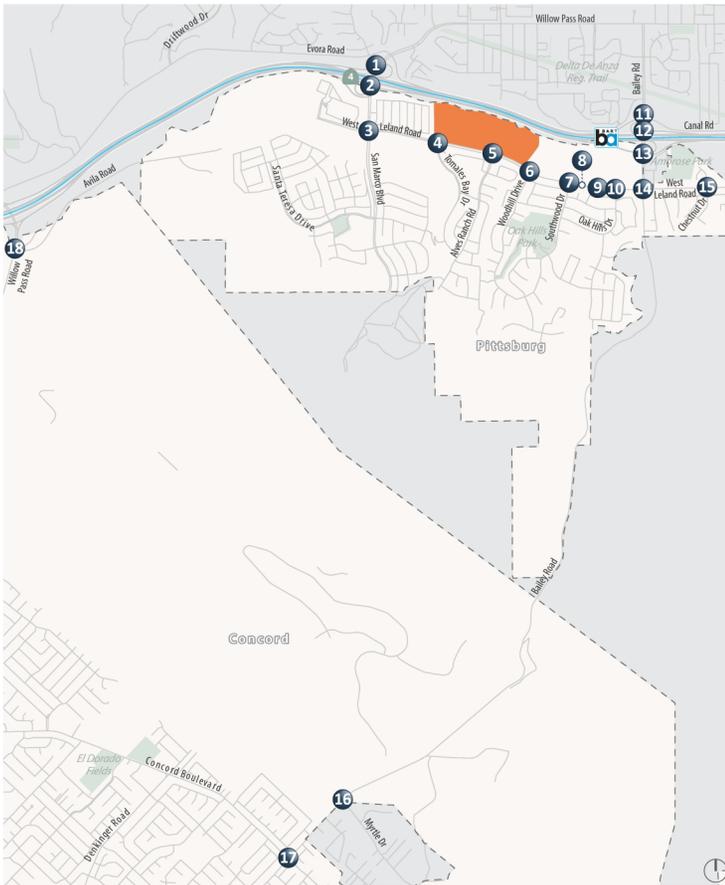


XX (YY) AM (PM) Peak Hour Traffic Volumes
 Signalized Intersection
 Stop Sign
 Project Site
 Study Intersection

<p>1. Willow Pass Rd/Evora Rd/SR4 WB Ramp</p>	<p>2. San Marcos Blvd/SR4 EB Ramps</p>	<p>3. San Marco Blvd/W Leland Rd</p>	<p>4. Tomales Bay Dr/W Leland Rd</p>	<p>5. Alves Ranch Rd/W Leland Rd</p>
<p>6. Woodhill Dr/W Leland Rd</p>	<p>7. Southwood Dr/W Leland Rd</p>	<p>8. BART Exit/W Leland Rd</p>	<p>9. BART Entrance/W Leland Rd</p>	<p>10. Oak Hills Dr/W Leland Rd</p>
<p>11. Bailey Rd/SR4 WB On-Ramp/Canal Rd</p>	<p>12. Bailey Rd/SR4 WB Off-Ramp</p>	<p>13. Bailey Rd/BART Entrance/SR4 EB Ramps</p>	<p>14. Bailey Rd/W Leland Rd</p>	<p>15. Chestnut Dr/W Leland Rd</p>
<p>16. Bailey Rd/Myrtle Dr</p>	<p>17. Bailey Rd/Concord Blvd</p>	<p>18. Willow Pass Rd/Avila Rd</p>		

Source: Fehr & Peers, November 2018.

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1. Willow Pass Rd/Evora Rd/SR4 WB Ramp	2. San Marcos Blvd/SR4 EB Ramps	3. San Marco Blvd/W Leland Rd	4. Tomales Bay Dr/W Leland Rd	5. Alves Ranch Rd/W Leland Rd
<p>Willow Pass Rd: 20 (260) ↑, 20 (60) ↓, 48 (152) ↓</p> <p>Evora Rd: 1,817 (690) ↑, 190 (40) ↓</p> <p>SR4 WB Off-Ramp: 416 (947) ↑, 379 (156) ↓</p> <p>SR4 WB Loop On-Ramp: 1,383 (510) ↑, 795 (1,103) ↓</p> <p>San Marcos Blvd: 184 (159) ↑, 1,908 (773) ↓</p> <p>SR4 EB Off-Ramp: 270 (640) ↓, 342 (697) ↓</p> <p>W Leland Rd: 110 (330) ↑, 250 (370) ↓, 300 (696) ↓</p> <p>SR4 EB Ramps: 1,032 (372) ↑, 990 (200) ↓, 288 (220) ↓</p>	<p>SR4 WB Loop On-Ramp: 1,383 (510) ↑, 795 (1,103) ↓</p> <p>San Marcos Blvd: 184 (159) ↑, 1,908 (773) ↓</p> <p>SR4 EB Off-Ramp: 270 (640) ↓, 342 (697) ↓</p> <p>SR4 EB Ramps: 1,032 (372) ↑, 990 (200) ↓, 288 (220) ↓</p>	<p>San Marco Blvd: 184 (159) ↑, 1,908 (773) ↓</p> <p>SR4 EB Off-Ramp: 270 (640) ↓, 342 (697) ↓</p> <p>SR4 EB Ramps: 1,032 (372) ↑, 990 (200) ↓, 288 (220) ↓</p>	<p>W Leland Rd: 67 (44) ↑, 25 (16) ↓</p> <p>Tomales Bay Dr: 8 (28) ↑, 1,408 (780) ↓</p>	<p>Alves Ranch Rd: 96 (217) ↑, 6 (15) ↓, 85 (208) ↓</p> <p>W Leland Rd: 118 (261) ↑, 695 (547) ↓, 40 (70) ↓</p> <p>Alvison Ranch Rd: 77 (210) ↑, 1,188 (542) ↓, 40 (100) ↓</p>
6. Woodhill Dr/W Leland Rd	7. Southwood Dr/W Leland Rd	8. BART Exit/W Leland Rd	9. BART Entrance/W Leland Rd	10. Oak Hills Dr/W Leland Rd
<p>W Leland Rd: 1,177 (785) ↑, 20 (60) ↓</p> <p>Woodhill Dr: 814 (694) ↑, 66 (115) ↓</p> <p>SR4 WB On-Ramp: 129 (64) ↑, 50 (40) ↓</p>	<p>W Leland Rd: 1,048 (771) ↑, 40 (120) ↓</p> <p>Southwood Dr: 779 (638) ↑, 86 (95) ↓</p> <p>SR4 WB Off-Ramp: 149 (74) ↑, 110 (60) ↓</p>	<p>BART Exit: 100 (140) ↑, 90 (200) ↓</p> <p>W Leland Rd: 889 (719) ↓</p>	<p>BART Entrance: 280 (90) ↑, 888 (751) ↓</p> <p>W Leland Rd: 150 (90) ↑, 829 (829) ↓</p>	<p>W Leland Rd: 1,215 (806) ↑, 100 (170) ↓</p> <p>Oak Hills Dr: 797 (764) ↑, 32 (45) ↓</p> <p>SR4 WB On-Ramp: 53 (65) ↑, 210 (130) ↓</p>
11. Bailey Rd/SR4 WB On-Ramp/Canal Rd	12. Bailey Rd/SR4 WB Off-Ramp	13. Bailey Rd/BART Entrance/SR4 EB Ramps	14. Bailey Rd/W Leland Rd	15. Chestnut Dr/W Leland Rd
<p>SR4 WB On-Ramp: 210 (150) ↑, 637 (677) ↓, 100 (80) ↓</p> <p>Canal Rd: 140 (120) ↑, 360 (140) ↓, 302 (192) ↓</p> <p>SR4 WB Off-Ramp: 639 (609) ↓</p> <p>BART Entrance: 90 (320) ↓</p> <p>SR4 EB Ramps: 210 (150) ↑, 245 (643) ↓, 250 (260) ↓</p> <p>W Leland Rd: 35 (303) ↑, 440 (200) ↓, 160 (510) ↓</p>	<p>SR4 WB Off-Ramp: 639 (609) ↓</p> <p>BART Entrance: 90 (320) ↓</p> <p>SR4 EB Ramps: 210 (150) ↑, 245 (643) ↓, 250 (260) ↓</p>	<p>BART Entrance: 90 (320) ↓</p> <p>SR4 EB Ramps: 210 (150) ↑, 245 (643) ↓, 250 (260) ↓</p>	<p>BART Entrance: 90 (320) ↓</p> <p>SR4 EB Ramps: 210 (150) ↑, 245 (643) ↓, 250 (260) ↓</p>	<p>SR4 EB Ramps: 210 (150) ↑, 245 (643) ↓, 250 (260) ↓</p> <p>W Leland Rd: 287 (245) ↑, 222 (537) ↓, 458 (132) ↓</p> <p>Chestnut Dr: 22 (12) ↑, 0 (0) ↓, 10 (10) ↓</p> <p>W Leland Rd: 11 (12) ↑, 418 (1,007) ↓, 23 (37) ↓</p> <p>SR4 EB Ramps: 106 (291) ↑, 228 (470) ↓, 20 (170) ↓</p> <p>W Leland Rd: 105 (37) ↑, 10 (0) ↓, 10 (10) ↓</p>
16. Bailey Rd/Myrtle Dr	17. Bailey Rd/Concord Blvd	18. Willow Pass Rd/Avila Rd		
<p>SR4 EB Ramps: 1,118 (332) ↑, 220 (30) ↓</p> <p>Myrtle Dr: 80 (70) ↑, 40 (20) ↓</p> <p>SR4 EB Ramps: 1,319 (456) ↑, 10 (20) ↓</p> <p>Willow Pass Rd: 20 (20) ↑, 10 (10) ↓</p>	<p>SR4 EB Ramps: 1,319 (456) ↑, 10 (20) ↓</p> <p>Willow Pass Rd: 20 (20) ↑, 10 (10) ↓</p>	<p>Willow Pass Rd: 20 (20) ↑, 10 (10) ↓</p> <p>Avila Rd: 633 (1,710) ↑, 10 (0) ↓</p>		

XX (YY) AM (PM) Peak Hour Traffic Volumes
 Signalized Intersection
 Stop Sign
 Project Site
 Study Intersection

Source: Fehr & Peers, November 2018.



Exhibit 3.5-10 Near-Term with Project Peak Hour Intersection Traffic Volumes, Lane Configurations and Traffic Controls

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Near-Term Traffic Conditions

Near-Term Without and With 2018 Project conditions are presented in Table 3.5-8, based on the traffic volumes and lane configurations presented on Exhibit 3.5-9 and Exhibit 3.5-10. In the Near-Term condition, the SR-4 Westbound Ramps at San Marco Boulevard/Evora Road, West Leland Road at San Marco Boulevard, and Bailey Road at Concord Boulevard intersections would operate at overall deficient levels. For unsignalized intersections, at least one side-street movement would experience deficient operations at the intersections of Bailey Road at SR-4 Westbound Ramps, Bailey Road at Myrtle Drive, and Willow Pass Road at Avila Road. All other study intersections would operate at acceptable service levels prior to the addition of 2018 Project traffic. With the addition of 2018 Project traffic, operations of the intersections already experiencing deficient operations would worsen, but no intersection would degrade from acceptable to unacceptable operations with the addition of 2018 Project traffic.

Table 3.5-8: Near-Term Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Level of Service Standard	Near-Term without 2018 Project		Near-Term with 2018 Project		Significant Impact?	Impacted by 2004 Project?
				Delay ²	LOS	Delay ²	LOS		
1. SR-4 Westbound Ramps at San Marco Boulevard/Evora Road	Signal	AM PM	Low-LOS D (50 seconds)	40 13	D B	42 14	D B	No	No
2. SR-4 Eastbound Ramps at San Marco Boulevard	Signal	AM PM	Low-LOS D (50 seconds)	15 15	B B	30 24	C C	No	Yes
3. West Leland Road at San Marco Boulevard	Signal	AM PM	LOS D (55-seconds)	208 63	F E	261 66	F E	Yes ; average delay increase of more than 5-seconds	No
4. West Leland Road at Tomales Bay Drive	SSSC	AM PM	LOS D (55-seconds)	1 (12) 1 (11)	A (B) A (B)	2 (34) 1 (15)	A (D) A (C)	No	Intersection not evaluated for 2004 Project.
5. West Leland Road at Alves Ranch Road	Signal	AM PM	LOS D (55-seconds)	10 11	A B	25 34	C C	No	No
6. West Leland Road at Woodhill Drive	Signal	AM PM	LOS D (55-seconds)	11 7	B A	8 6	A A	No	No
7. West Leland Road at Southwood Drive	Signal	AM PM	LOS D (55-seconds)	16 18	B B	18 19	B B	No	No
8. West Leland Road at BART Exit	Signal	AM PM	LOS D (55-seconds)	9 12	A B	9 12	A B	No	No
9. West Leland Road at BART Entrance	Signal	AM PM	LOS D (55-seconds)	8 10	A B	8 10	A B	No	No
10. West Leland Road at Oak Hills Drive	Signal	AM PM	LOS D (55-seconds)	13 18	B B	14 18	B B	No	No
11. Bailey Road at Canal Road	Signal	AM PM	LOS E (80-Seconds)	38 17	D B	38 17	D B	No	Intersection not evaluated for 2004 Project.

Table 3.5-8 (cont.): Near-Term Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Level of Service Standard	Near-Term without 2018 Project		Near-Term with 2018 Project		Significant Impact?	Impacted by 2004 Project?
				Delay ²	LOS	Delay ²	LOS		
12. Bailey Road at SR-4 Westbound Ramps	SSSC	AM PM	LOS E (80-Seconds)	1 (20) 25 (207)	A (C) C (F)	1 (21) 26 (218)	A (C) D (F)	No; while LOS is at LOS F, the signal warrants are not met and side-street delay does not increase by more than 30-seconds	No
13. Bailey Road at SR-4 Eastbound Ramps	Signal	AM PM	LOS E (80-Seconds)	17 24	B C	17 24	B C	No	No
14. West Leland Road at Bailey Road	Signal	AM PM	LOS E (80-Seconds)	53 29	D C	60 33	E C	No; LOS Standard is E for the intersection	No
15. West Leland Road at Chestnut Drive	Signal	AM PM	LOS D (55-seconds)	36 15	D B	38 16	D B	No	No
16. Bailey Road at Myrtle Drive	SSSC	AM PM	LOS E (80-Seconds)	11 (102) 2 (30)	B (F) A (D)	12 (111) 2 (31)	B (F) A (D)	No; while the LOS decreases to LOS F, the side-street delay does not increase by more than 30-seconds	No
17. Bailey Road at Concord Boulevard	Signal	AM PM	LOS E (80-Seconds)	62 66	E E	64 70	E E	No; while the LOS is at LOS E, the delay does not increase by more than 5-seconds	No

Table 3.5-8 (cont.): Near-Term Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Level of Service Standard	Near-Term without 2018 Project		Near-Term with 2018 Project		Significant Impact?	Impacted by 2004 Project?
				Delay ²	LOS	Delay ²	LOS		
18. Willow Pass Road at Avila Road	SSSC	AM PM	LOS E (80-Seconds)	1 (25) 1 (53)	A (C) A (F)	1 (25) 1 (55)	A (C) A (F)	No; while the LOS decreases to LOS F, the signal warrants are not met and side-street delay does not increase by more than 30-seconds	No

Notes:
¹ Signal = signalized intersection; SSSC = side-street stop-control
² Average intersection delay is calculated for all signalized intersections using the HCM method for vehicles.
³ Delay presented here does not consider delay associated with the westbound SR-4 on-ramp.
 Source: Fehr & Peers 2018

Vehicle queues are expected to increase at study intersections as traffic volumes increase, which would further increase with the addition of 2018 Project traffic. In the Near-Term Plus 2018 Project condition, average left-turn vehicle queues are contained within the available storage with the 95th percentile vehicle queue for some movements potentially extending beyond the available storage that did not extend beyond the available storage in the existing condition, including:

- San Marco Boulevard at SR-4 Eastbound Ramps (eastbound right, PM peak-hour)
- San Marco Boulevard at West Leland Road (southbound left, PM peak-hour)
- Bailey Road at West Leland Road (eastbound left and northbound left, PM peak-hour)

For signalized intersections that are projected to operate at LOS D or better during the AM and PM peak-hours, monitoring and adjusting traffic signal timings in response to actual traffic volumes to minimize the potential for vehicle queue spillback is recommended.

Impacts and Mitigation

West Leland Road at San Marco Boulevard

The West Leland Road at San Marco Boulevard intersection is projected to operate at a deficient LOS F in the AM peak-hour prior to the addition of 2018 Project traffic in the Near-Term condition. The addition of 2018 Project traffic would worsen operations and increase average delay by more than 5-seconds. Based on the significance criteria, this is considered a significant impact.

Implementation of Mitigation Measure TRANS-1a would reduce the 2018 Project’s near-term impact to a less-than-significant level, as shown in Table 3.5-9. However, as implementation of the various measures required to improve operations cannot be assured, this impact would remain significant and unavoidable.

Table 3.5-9: Near-Term With 2018 Project With Mitigation Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Near-term without Project		Near-Term with 2018 Project		Near-Term with 2018 Project with Mitigation	
			Delay ²	LOS	Delay ²	LOS	Delay ²	LOS
3. West Leland Road at San Marco Boulevard	Signal	AM PM	208 63	F E	261 66	F E	53 65	D E

Notes:
¹ Signal = signalized intersection; SSSC = side-street stop-controlled
² Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
 Source: Fehr & Peers 2018

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure TRANS-1a and Mitigation Measure TRANS-4.

Level of Significance After Mitigation

Significant unavoidable impact.

Cumulative Traffic Conditions

Impact TRANS-3: The 2018 Project may contribute to unacceptable intersection operations under Cumulative Conditions.

Impact Analysis

The Cumulative Conditions analysis considers development within the City of Pittsburg as described in the General Plan, as well as relevant development in adjacent jurisdictions, as explained further below. The Cumulative Traffic Forecast reflect a 2040 projection of residential and employment development, as well as reasonably foreseeable transportation network improvements in the study area, as further described below. The cumulative analysis in the 2004 EIR considered a 2025 horizon year.

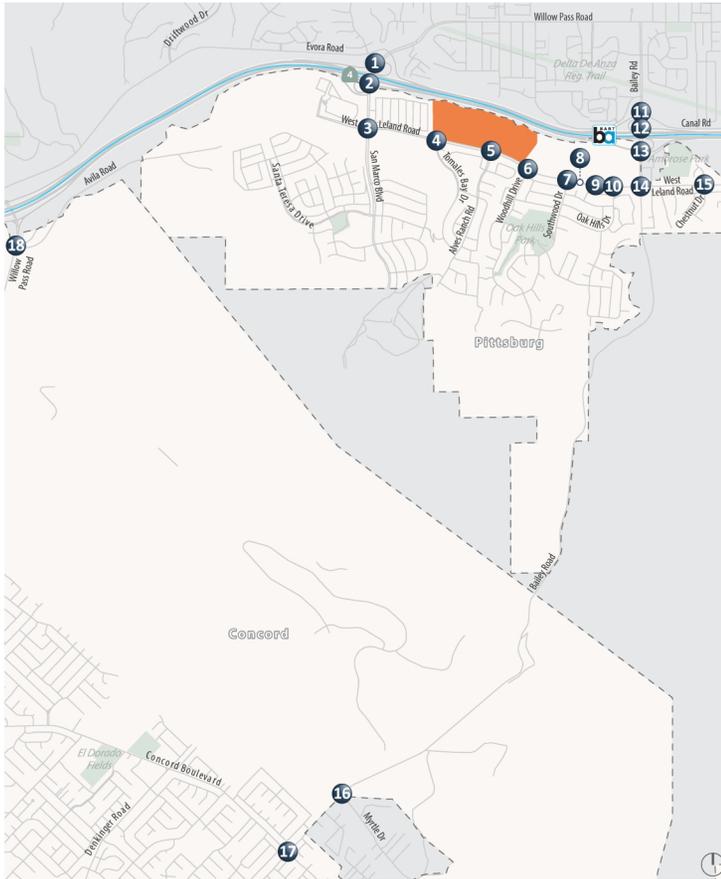
Cumulative Traffic Forecasts

To assess cumulative growth in Pittsburg and adjacent communities several sources of data were reviewed, including the CCTA Model which reflects growth in Pittsburg and surrounding jurisdictions based on their respective General Plans and regional growth forecasts, the ongoing plans for the Concord Naval Weapons Station, and adopted plans for development on the Pittsburg/Bay Point BART station. Traffic forecasts within the study area were reviewed to ensure that known developments were adequately reflected in the forecasts, such as the San Marco subdivision.

The resulting traffic forecasts reflect the most current growth projections for the area from the Association of Bay Area Governments (ABAG), the Metropolitan Transportation Commission (MTC) and CCTA. Minor adjustments were made to the forecasts to balance traffic volumes between closely spaced intersections in the study area. The resulting Cumulative Without 2018 Project forecasts are presented on Exhibit 3.5-11, which are representative of conditions over the next 20 to 25 years. The 2018 Project volumes were added to the Cumulative Without 2018 Project traffic volumes to represent Cumulative With 2018 Project conditions, as presented on Exhibit 3.5-12.

Cumulative Roadway Assumptions

In the Cumulative condition a number of roadway improvements are scheduled to be completed, including the extension of West Leland Road to Avila Road, providing a connection to Willow Pass Road, improvements to SR-4 between Interstate 680 (I-680) and Willow Pass Road, improvements to SR-242. Additionally, operational improvements to SR-4 between I-680 and Bailey Road are also planned for implementation, which include a number of discrete improvements aimed at reducing bottleneck, such as adding mixed-flow travel lanes between interchanges, and extending mixed-flow travel lanes. Vehicle traffic generated by the 2018 Project would contribute to the need for local and regional roadway improvements. Therefore, the 2018 Project would contribute to the construction of regional roadway improvements through the payment of applicable regional transportation impact fees to the ECCRFFA.

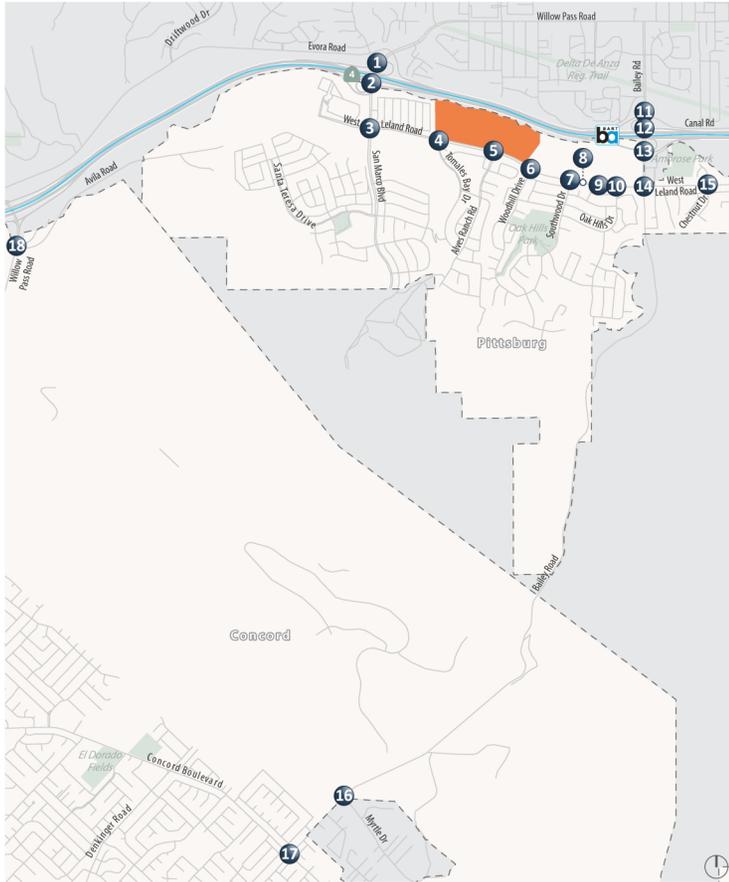


XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign
 Project Site Study Intersection

<p>1. Willow Pass Rd/Evora Rd/SR4 WB Ramp</p>	<p>2. San Marcos Blvd/SR 4 EB Ramps</p>	<p>3. San Marcos Blvd/W Leland Rd</p>	<p>4. Tomales Bay Dr/W Leland Rd</p>	<p>5. Alves Ranch Rd/W Leland Rd</p>
<p>6. Woodhill Dr/W Leland Rd</p>	<p>7. Southwood Dr/W Leland Rd</p>	<p>8. BART Exit/W Leland Rd</p>	<p>9. BART Entrance/W Leland Rd</p>	<p>10. Oak Hills Dr/W Leland Rd</p>
<p>11. Bailey Rd/SR4 WB On-Ramp/Canal Rd</p>	<p>12. Bailey Rd/SR4 WB Off-Ramp</p>	<p>13. Bailey Rd/BART Entrance/SR4 EB Ramps</p>	<p>14. Bailey Rd/W Leland Rd</p>	<p>15. Chestnut Dr/W Leland Rd</p>
<p>16. Bailey Rd/Myrtle Dr</p>	<p>17. Bailey Rd/Concord Blvd</p>	<p>18. Willow Pass Rd/Avila Rd</p>		

Source: Fehr & Peers, November 2018.

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XX (YY) AM (PM) Peak Hour Traffic Volumes Signalized Intersection Stop Sign
 Project Site Study Intersection

<p>1. Willow Pass Rd/Evora Rd/SR4 WB Ramp</p> <p>Willow Pass Rd Evora Rd SR4 WB Off-Ramp</p> <p>40 (300) 30 (110) 66 (172)</p> <p>446 (1,158) 260 (130)</p> <p>2,017 (780) 250 (60)</p> <p>30 (110) 450 (250)</p>	<p>2. San Marcos Blvd/SR4 EB Ramps</p> <p>San Marcos Blvd SR4 WB Loop On-Ramp SR4 EB On-Ramp</p> <p>1,122 (396) 706 (1,288)</p> <p>505 (472) 290 (290)</p> <p>274 (199) 1,478 (624)</p>	<p>3. San Marco Blvd/W Leland Rd</p> <p>San Marco Blvd W Leland Rd</p> <p>860 (200) 270 (370) 314 (621)</p> <p>841 (393) 834 (896) 316 (263)</p> <p>270 (170) 453 (1,110) 80 (30)</p> <p>60 (60) 540 (280) 294 (223)</p>	<p>4. Tomales Bay Dr/W Leland Rd</p> <p>Tomales Bay Dr W Leland Rd</p> <p>65 (44) 25 (16)</p> <p>8 (27) 1,879 (1,544)</p> <p>22 (73) 1,088 (1,925) 40 (50)</p> <p>33 (26)</p>	<p>5. Alves Ranch Rd/W Leland Rd</p> <p>Alves Ranch Rd W Leland Rd</p> <p>76 (51) 3 (20) 65 (248)</p> <p>71 (222) 1,658 (1,251) 50 (110)</p> <p>101 (282) 965 (1,507) 80 (80)</p> <p>150 (67) 147 (177) 120 (77)</p>
<p>6. Woodhill Dr/W Leland Rd</p> <p>Woodhill Dr W Leland Rd</p> <p>1,631 (1,437) 30 (30)</p> <p>1,086 (1,845) 63 (80)</p> <p>148 (147) 60 (50)</p>	<p>7. Southwood Dr/W Leland Rd</p> <p>Southwood Dr W Leland Rd</p> <p>1,453 (1,441) 60 (140)</p> <p>1,123 (1,766) 93 (110)</p> <p>166 (77) 130 (90)</p>	<p>8. BART Exit/W Leland Rd</p> <p>BART Exit W Leland Rd</p> <p>50 (40) 30 (170)</p> <p>10 (20) 1,453 (1,541)</p> <p>30 (70) 1,223 (1,786)</p>	<p>9. BART Entrance/W Leland Rd</p> <p>BART Entrance W Leland Rd</p> <p>10 (90) 50 (390)</p> <p>370 (160) 1,443 (1,471)</p> <p>50 (40) 1,203 (1,916)</p>	<p>10. Oak Hills Dr/W Leland Rd</p> <p>Oak Hills Dr W Leland Rd</p> <p>10 (60) 5 (30) 30 (230)</p> <p>120 (100) 1,740 (1,535) 120 (160)</p> <p>30 (30) 1,182 (2,229) 41 (47)</p> <p>65 (36) 147 (130) 250 (130)</p>
<p>11. Bailey Rd/SR4 WB On-Ramp/Canal Rd</p> <p>Bailey Rd SR4 WB On-Ramp Canal Rd</p> <p>210 (140) 957 (707) 100 (90)</p> <p>290 (120) 750 (150) 291 (233)</p> <p>630 (290) 960 (1,350) 301 (773)</p>	<p>12. Bailey Rd/SR4 WB Off-Ramp</p> <p>Bailey Rd SR4 WB Off-Ramp</p> <p>1,248 (940)</p> <p>110 (360)</p> <p>285 (636)</p> <p>1,781 (2,053)</p>	<p>13. Bailey Rd/BART Entrance/SR4 EB Ramps</p> <p>Bailey Rd BART Entrance SR4 EB Ramps</p> <p>280 (190) 1,023 (1,076) 230 (310)</p> <p>270 (750)</p> <p>90 (120) 140 (210) 270 (720)</p> <p>1,421 (1,223) 380 (551)</p>	<p>14. Bailey Rd/W Leland Rd</p> <p>Bailey Rd W Leland Rd</p> <p>223 (556) 620 (630) 250 (610)</p> <p>640 (470) 1,491 (819) 300 (60)</p> <p>480 (724) 524 (1,763) 408 (102)</p> <p>166 (320) 500 (500) 50 (180)</p>	<p>15. Chestnut Dr/W Leland Rd</p> <p>Chestnut Dr W Leland Rd</p> <p>21 (13) 0 (10) 10 (10)</p> <p>10 (10) 2,326 (1,258) 10 (10)</p> <p>41 (13) 772 (2,310) 32 (60)</p> <p>114 (88) 147 (147) 10 (10)</p>
<p>16. Bailey Rd/Myrtle Dr</p> <p>Bailey Rd Myrtle Dr</p> <p>1,208 (612) 250 (50)</p> <p>80 (80) 50 (30)</p> <p>596 (1,140) 90 (60)</p>	<p>17. Bailey Rd/Concord Blvd</p> <p>Bailey Rd Concord Blvd</p> <p>665 (453) 359 (366) 185 (153)</p> <p>102 (155) 1,300 (680) 190 (60)</p> <p>242 (465) 600 (1,280) 120 (110)</p> <p>140 (120) 383 (570) 80 (80)</p>	<p>18. Willow Pass Rd/Avila Rd</p> <p>Willow Pass Rd Avila Rd</p> <p>500 (300) 1,400 (1,100) 100 (150)</p> <p>215 (100) 550 (450) 309 (256)</p> <p>210 (130) 1,040 (1,700) 53 (250)</p>		

Source: Fehr & Peers, November 2018.

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Cumulative Traffic Conditions

Cumulative Without and With 2018 Project conditions are presented in Table 3.5-10, based on the traffic volumes presented on Exhibit 3.5-11 and Exhibit 3.5-12. In the Cumulative condition, the West Leland Road at San Marco Boulevard, Bailey Road at Canal Road, West Leland Road at Bailey Road, and Bailey Road at Concord Boulevard intersections would operate at overall deficient levels. For unsignalized intersections, at least one side-street movement would experience deficient operations at the intersections of Bailey Road at SR-4 Westbound Ramps, and Bailey Road at Myrtle Drive. All other study intersections would operate at acceptable service levels prior to and after the addition of 2018 Project traffic.

Table 3.5-10: Cumulative Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Level of Service Standard	Cumulative without 2018 Project		Cumulative with 2018 Project		Impact?	Impacted by 2004 Project?
				Delay ²	LOS	Delay ²	LOS		
1. SR-4 Westbound Ramps at San Marco Boulevard/Evora Road	Signal	AM PM	Low-LOS D (50 seconds)	42 15	D B	45 15	D B	No	No
2. SR-4 Eastbound Ramps at San Marco Boulevard	Signal	AM PM	Low-LOS D (50 seconds)	9 9	A A	11 14	B B	No	No
3. West Leland Road at San Marco	Signal	AM PM	LOS D (55-seconds)	102 57	F E	117 71	F E	Yes ; average delay increase of more than 5-seconds	Yes
4. West Leland Road at Tomales Bay Drive	SSSC	AM PM	LOS D (55-seconds)	0 (14) 0 (19)	A (B) A (C)	3 (102) 1 (37)	A (F) A (E)	No; while the LOS would decrease to LOS E/F, the signal warrants are not met	Intersection not evaluated in 2004 Final EIR
5. West Leland Road at Alves Ranch Road	Signal	AM PM	LOS D (55-seconds)	12 10	B A	33 33	C C	No	No
6. West Leland Road at Woodhill Drive	Signal	AM PM	LOS D (55-seconds)	8 6	A A	9 7	A A	No	No
7. West Leland Road at Southwood Drive	Signal	AM PM	LOS D (55-seconds)	29 35	C D	36 53	D D	No	No
8. West Leland Road at BART Exit	Signal	AM PM	LOS D (55-seconds)	22 18	C B	28 21	C C	No	No
9. West Leland Road at BART Entrance	Signal	AM PM	LOS D (55-seconds)	3 18	A B	2 19	A B	No	No
10. West Leland Road at Oak Hills Drive	Signal	AM PM	LOS D (55-seconds)	18 39	B D	21 57	C E	Yes	No
11. Bailey Road at Canal Road	Signal	AM PM	LOS E (80-Seconds)	65 23	E C	65 23	E C	No	Intersection not evaluated in 2004 Final EIR

Table 3.5-10: Cumulative Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Level of Service Standard	Cumulative without 2018 Project		Cumulative with 2018 Project		Impact?	Impacted by 2004 Project?
				Delay ²	LOS	Delay ²	LOS		
12. Bailey Road/SR-4 Westbound Ramps	SSSC	AM PM	LOS E (80-Seconds)	1 (36) 67 (>120)	A (E) F (F)	1 (37) 69 (>120)	A (E) F (F)	No; while the LOS would be at LOS E/D, the signal warrants are not met and the 2018 Project traffic does not increase by 10 or more vehicles (delay cannot be measured)	No
13. Bailey Road/SR-4 Eastbound Ramps	Signal	AM PM	LOS E (80-Seconds)	16 31	B C	16 32	B C	No	No
14. West Leland Road at Bailey Road	Signal	AM PM	LOS E (80-Seconds)	143 172	F F	150 201	F F	Yes ; average delay increase of more than 5-seconds	Yes
15. West Leland Road at Chestnut Drive	Signal	AM PM	LOS D (55-seconds)	40 27	D C	42 34	D C	No	No
16. Bailey Road at Myrtle Drive	SSSC	AM PM	LOS E (80-Seconds)	54 (>120) 6 (100)	E (F) A (F)	56 (>120) 7 (111)	F (F) A (F)	Yes ; side-street delay increases by more than 30-seconds and signal warrants met without project	No
17. Bailey Road at Concord Boulevard	Signal	AM PM	LOS E (80-Seconds)	181 204	F F	185 209	F F	Yes ; average delay increase of more than 5-seconds	Yes
18. Willow Pass Road at Avila Road	Signal	AM PM	LOS E (80-Seconds)	38 50	D D	38 50	D D	No	Yes

Notes:

¹ Signal = signalized intersection; SSSC = side-street stop-control

² Average intersection delay is calculated for all signalized intersections using the HCM method for vehicles.

³ Delay presented here does not consider delay associated with the westbound SR-4 on-ramp.

Source: Fehr & Peers 2018

With the addition of 2018 Project traffic, operations of the intersections already experiencing deficient operations would worsen, resulting in potentially significant impacts.

Vehicle queues are expected to increase at study intersections as traffic volumes increase, which would further increase with the addition of the 2018 Project traffic. In the Cumulative With Project condition, average left-turn vehicle queues are contained within the available storage with the 95th percentile vehicle queue for some movements potentially extending beyond the available storage that did not extend beyond the available storage in the existing condition, including:

- San Marco Boulevard at SR-4 Eastbound Ramps (eastbound right, PM peak-hour)
- San Marco Boulevard at West Leland Road (southbound left and westbound right, PM peak-hour)
- West Leland Road at Alves Ranch (northbound left, AM peak-hour)

Impacts and Mitigation

Five potential off-site intersection impacts were identified in the Cumulative condition.

West Leland Road at San Marco Boulevard

The West Leland Road at San Marco Boulevard intersection is projected to operate at a deficient LOS F in the AM peak-hour prior to the addition of the 2018 Project traffic in the Cumulative condition, and a deficient LOS E in the PM peak-hour. The addition of the 2018 Project traffic would worsen operations and increase average delay by more than 5-seconds. Based on the significance criteria, this is considered a significant impact.

Implementation of Mitigation Measure TRANS-1a and Mitigation Measure Trans 4 would reduce the 2018 Project's impact to a less-than-significant level, as shown in Table 3.5-11. However, as implementation of the various measures required to improve operations cannot be assured, this impact would remain significant and unavoidable.

West Leland Road at Oak Hills Drive

The West Leland Road at Oak Hills Drive intersection is projected to operate at an acceptable LOS D in the PM peak-hour prior to the addition of the 2018 Project traffic in the Cumulative condition. The addition of the 2018 Project traffic would worsen the level of service to LOS E in the PM peak-hour. Based on the significance criteria, this is considered a significant impact.

To mitigate this impact, the 2018 Project applicant would be required to pay, its pro rata fair share fees to restripe the northbound approach to provide separate left and right-turn lanes, as reflected in Mitigation Measure TRANS-3a. This improvement is also a mitigation measure for planned development on the Pittsburg/Bay Point BART station and assumes that a north leg to this intersection is constructed as part of the BART project, as identified in the Pittsburg/Bay Point BART Specific Plan and associated EIR. Should BART development not occur, this improvement would not be necessary. Implementation of this improvement would result in overall acceptable service levels, reducing the 2018 Project's impact to a less-than-significant level, as shown in Table 3.5-11.

West Leland Road at Bailey Road

The West Leland Road at Bailey Road intersection is projected to operate at a deficient LOS F during both AM and PM peak-hours prior to the addition of the 2018 Project traffic in the Cumulative condition. The addition of the 2018 Project traffic would worsen operations and increase average delay by more than 5-seconds during both AM and PM peak-hours. Based on the significance criteria, this is considered a significant impact.

To mitigate this impact, the 2018 Project applicant would be required to contribute its pro rata fair share to improvements that could improve the operations of the intersection, including the construction of a second eastbound left-turn lane. However, there is insufficient right-of-way available to construct this improvement. With this improvement, the operations would improve as compared to the Without Project condition, although the intersection would continue to operate at a deficient LOS F. This improvement is reflected in Mitigation Measure TRANS-3b. As it is uncertain if improvements could be constructed and identified improvements would not result in acceptable LOS E operations, this impact would remain significant and unavoidable. The project applicant previously paid transportation impact fees for improvements at this intersection associated with development of the entitled project.

Bailey Road at Myrtle Drive

The Bailey Road at Myrtle Drive intersection is projected to operate at deficient levels prior to the addition of the 2018 Project traffic in the Cumulative condition; peak-hour warrants would be met. The addition of the 2018 Project traffic would increase side-street delay by more than 30-seconds. Based on the significance criteria, this is considered a significant impact.

To mitigate this impact, the 2018 Project applicant would be required to pay, under specified circumstances, its pro rata fair share towards the signalization of this intersection in conjunction with the construction of a southbound left-turn lane and other potential improvements. These improvements would result in overall acceptable service levels, reducing the 2018 Project's cumulative impact to a less-than-significant level, as shown in Table 3.5-11. This improvement is reflected in Mitigation Measure TRANS-3c.

However, improvements to this intersection would require the lawful establishment of an impact fee as well as the approval from the City of Concord to proceed with the identified improvements, and therefore, the City of Pittsburg cannot ensure whether and/or when implementation of this measure would occur. Therefore, the impact would remain significant and unavoidable.

Bailey Road at Concord Boulevard

The Bailey Road at Concord Boulevard intersection is projected to operate at a deficient LOS F in the AM and PM peak-hour prior to the addition of the 2018 Project traffic in the Cumulative condition. The addition of the 2018 Project-generated vehicle trips during the PM peak-hour would increase delay in the PM peak-hour by more than 5-seconds. Based on the significance criteria, this is considered a significant impact.

To mitigate this impact, the 2018 Project applicant would be required to install a southbound right-turn overlap phase and work with the City of Concord to retime the traffic signal. Construction of

this improvement would not result in acceptable operations, as shown in Table 3.5-11, but it would reduce the overall delay such that the With 2018 Project With Mitigation condition is better than the Without 2018 Project condition, reducing the cumulative impact to a less-than-significant level. This improvement is reflected in Mitigation Measure TRANS-3d.

However, improvements to this intersection would require approval from the City of Concord and the City of Pittsburg cannot ensure whether and/or when implementation of this measure would occur. Therefore, the impact would remain significant and unavoidable.

Table 3.5-11: Cumulative With 2018 Project With Mitigation Conditions Peak-hour Intersection LOS Summary

Intersection	Control ¹	Peak-hour	Cumulative		Cumulative with 2018 Project		Cumulative with 2018 Project with Mitigation	
			Delay ²	LOS	Delay ²	LOS	Delay ²	LOS
3. West Leland Road at San Marco	Signal	AM	102	F	117	F	60	E
		PM	57	E	71	E	72	E
10. West Leland Road at Oak Hills Drive	Signal	AM	18	B	21	C	17	B
		PM	39	D	57	E	50	D
14. West Leland Road at Bailey Road	Signal	AM	143	F	150	F	120	F
		PM	172	F	201	F	137	F
16. Bailey Road at Myrtle Drive	SSSC	AM	54 (>120)	E (F)	56 (>120)	F (F)	10	A
		PM	6 (100)	A (F)	7 (111)	A (F)	8	A
17. Bailey Road at Concord Boulevard	Signal	AM	181	F	185	F	180	F
		PM	204	F	209	F	195	F

Notes:
¹ Signal = signalized intersection
² Average intersection delay is calculated for all signalized intersections using the 2010 HCM method for vehicles.
 Source: Fehr & Peers 2018

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-3a Prior to issuance of building permits, the 2018 Project applicant shall pay to the City of Pittsburg its pro rata fair share of the cost to restripe the northbound approach of the West Leland Road at Oak Hills Drive intersection to provide separate left and right-turn lanes. Provided, however, that should BART development not occur, this improvement would not be necessary, and the 2018 Project applicant would not be required to pay the fees identified in this Mitigation Measure TRANS-3a.

Development considered in the Pittsburg/Bay Point BART Specific Plan included 1,168 dwelling units and 146,362 square feet of nonresidential uses in conjunction with site access and circulation improvements and parking.

MM TRANS-3b Prior to issuance of building permits, the 2018 Project applicant shall pay to the City of Pittsburg its pro rata fair share of the cost to construct a second eastbound left-turn lane. However, there is insufficient right-of-way available to construct this improvement. As it is uncertain if improvements could be constructed and identified improvements would not result in acceptable LOS E operations, this impact would remain **significant and unavoidable**. The project applicant previously paid transportation impact fees for improvements at this intersection associated with development of the entitled project.

MM TRANS-3c Prior to issuance of building permits, the 2018 Project applicant shall pay to the City of Concord its pro rata fair share of the costs to improve the intersection of Bailey Road/Myrtle Drive if and to the extent the City of Concord has, at the time of building permit issuance, lawfully established an impact fee to fund the foregoing improvements. The improvements shall consist of signalization of this intersection in conjunction with the construction of a southbound left-turn lane. Provided, however, this mitigation measure shall not apply if there is not a legal mechanism by which for the 2018 Applicant to provide fees to the City of Concord or if the City of Concord does not support the improvements, as reflected by the City of Concord's lawful establishment of an impact fee to fund said improvements.

MM TRANS-3d Prior to issuance of building permits, the 2018 Project applicant shall pay to the City of Concord its pro rata fair share of the costs to improve the intersection of Bailey Road/Concord Boulevard if and to the extent the City of Concord has, at the time of building permit issuance, lawfully established an impact fee to fund the foregoing improvements. The improvements shall consist of installation of southbound right-turn overlap phase and retiming the traffic signal to allow such a movement. Provided, however, this mitigation measure shall not apply if there is not a legal mechanism by which for the applicant to provide fees to the City of Concord or if the City of Concord does not support the improvements, as reflected by the City of Concord's lawful establishment of an impact fee to fund said improvements.

Level of Significance After Mitigation

Significant unavoidable impact.

Congestion Management Program Facilities

Impact TRANS-4: The 2018 Project may conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

Impact Analysis

This impact evaluates mainline and ramp meter conditions on SR-4, which is a Congestion Management Program facility.

Mainline Analysis

Existing Conditions

Existing conditions mainline traffic counts for the SR-4 study corridor and associated on and off-ramps were obtained from the Caltrans PeMS. From this data, the peak-hour of westbound and eastbound travel was identified during both the AM and PM commute periods. Initial travel speeds were calculated, which were then compared against available speed data from Global Positioning System (GPS) devices from vehicles that travel the corridor, as well as from travel surveys conducted by Fehr & Peers staff.

Existing conditions results are presented in Table 3.5-12 for the AM peak-hour and Table 3.5-13 for the PM peak-hour. During the AM peak-hour, congestion is experienced in the westbound direction, such that some segments of SR-4 operate with a delay index in excess of 6.0, meaning that travel during peak times takes six times longer than travel during off-peak times. During the PM peak-hour, the majority of delay is experienced at the SR-4/SR-242 interchange, with highway operations improving in the vicinity of the Willow Pass Road interchange.

During both AM and PM peak-hours, the addition of the 2018 Project traffic would worsen the operation of highway segments that are already projected to operate deficiently, but would not result in new deficiencies. The amount of vehicle traffic in high-occupancy vehicle lanes was also assessed, as presented in Table 3.5-14, which shows that in both the AM and PM peak-hours in the Existing condition, the volume of traffic in the HOV lane exceeds the desired MTSO standard (600 vehicles per hour). The 2018 Project is expected to add traffic to these HOV lane segments, worsening an existing deficiency.

Table 3.5-12: Existing Conditions Highway Operations Summary—AM Peak-hour

Segment	Direction	Existing		Existing with 2018 Project	
		Volume	Delay Index	Volume	Delay Index
1. SR-4, between Arnold Industrial Place/Solano Way and SR-242	EB	2,880	1.01	2,894	1.01
	WB	4,940	1.64	4,971	1.67
2. SR-4, between SR-242 and Port Chicago Highway	EB	1,839	1.00	2,762	1.00
	WB ¹	5,100	3.11	5,193	3.43

Table 3.5-12 (cont.): Existing Conditions Highway Operations Summary—AM Peak-hour

Segment	Direction	Existing		Existing with 2018 Project	
		Volume	Delay Index	Volume	Delay Index
3. SR-4, between Port Chicago Highway and Willow Pass Road	EB	2,252	1.00	3,372	1.00
	WB ¹	6,242	1.41	7,143	1.46
4. SR-4, between Willow Pass Road and San Marco Boulevard	EB	2,306	1.00	3,452	1.00
	WB ¹	8,943	3.14	10,193	3.30
5. SR-4, between San Marco Boulevard and Bailey Road	EB	2,103	1.00	3,124	1.00
	WB ¹	8,500	5.89	9,608	5.92
6. SR-4, between Bailey Road and Railroad Avenue	EB	2,150	1.00	3,218	1.00
	WB ¹	8,588	6.31	9,724	6.42

Notes:
¹ AM peak-hour analysis reflects operation of the HOV lane, which carries approximately 13 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak-hour.
 Source: Fehr & Peers 2018.

Table 3.5-13: Existing Conditions Highway Operations Summary—PM Peak-hour

Segment	Direction	Existing		Existing with 2018 Project	
		Volume	Delay Index	Volume	Delay Index
1. SR-4, between Arnold Industrial Place/Solano Way and SR-242	EB	5,710	3.03	5,749	3.14
	WB	2,070	1.00	2,097	1.00
2. SR-4, between SR-242 and Port Chicago Highway	EB	7,829	3.53	10,517	3.81
	WB ¹	2,300	1.00	2,380	1.00
3. SR-4, between Port Chicago Highway and Willow Pass Road	EB	5,797	1.23	7,817	1.26
	WB ¹	3,839	1.00	4,830	1.01
4. SR-4, between Willow Pass Road and San Marco Boulevard	EB	4,366	1.01	5,917	1.01
	WB ¹	3,572	1.00	4,500	1.00
5. SR-4, between San Marco Boulevard and Bailey Road	EB	3,538	1.00	4,709	1.00
	WB ¹	3,216	1.00	4,002	1.00
6. SR-4, between Bailey Road and Railroad Avenue	EB	3,124	1.00	4,193	1.00
	WB ¹	3,249	1.00	4,076	1.00

Notes:
¹ PM peak-hour analysis reflects operation of the HOV lane, which carries approximately 13 percent of traffic volumes, reducing the number of mixed-flow lanes available during the PM peak-hour.
 Source: Fehr & Peers 2018.

Table 3.5-14: Existing Conditions Highway Operations Summary—HOV Lane Volumes

Segment	Direction	Existing		Existing with 2018 Project	
		AM	PM	AM	PM
1. SR-4, between Arnold Industrial Place/Solano Way and SR-242	EB	—	—	—	—
	WB	—	—	—	—
2. SR-4, between SR-242 and Port Chicago Highway	EB	—	2,571	—	2,586
	WB	—	—	—	—
3. SR-4, between Port Chicago Highway and Willow Pass Road	EB	—	1,903	—	1,919
	WB	808	—	820	—
4. SR-4, between Willow Pass Road and San Marco Boulevard	EB	—	1,434	—	1,449
	WB	1,157	—	1,170	—
5. SR-4, between San Marco Boulevard and Bailey Road	EB	—	1,162	—	1,163
	WB	1,100	—	1,101	—
6. SR-4, between Bailey Road and Railroad Avenue	EB	—	1,026	—	1,031
	WB	1,112	—	1,115	—

Note:
Bold indicates volume exceeds desired volume of 600 vehicles per hour.
 Source: Fehr & Peers 2018.

Near-Term Conditions

Near-term highway forecasts were developed based on the same method used to develop the near-term intersection forecasts, both without and with the 2018 Project. Operations were evaluated using the same methods described in Chapter 1. No highway improvements were included in the evaluation of near-term highway improvements. The Near-Term Without and With 2018 Project analysis results are presented in Table 3.5-15 and Table 3.5-16, for the AM and PM peak-hours, respectively, based on the estimates of near-term traffic volumes, plus estimates of the 2018 Project traffic. The 2018 Project would increase traffic on highways in the study area, and worsen the delay index for segments that are projected to exceed the standard; however, it would not result in study-segment operations to degrade beyond the established standard.

The amount of vehicle traffic in high-occupancy vehicle lanes was also assessed, as presented in Table 3.5-17, which shows that in both the AM and PM peak-hours, the volume of traffic in the HOV lane is above the desired MTSO standard of at least 600 vehicles per hour per lane. The project is expected to add traffic to these HOV lane segments. The 2018 Project is expected to add traffic to these HOV lane segments, worsening already deficient operations.

Table 3.5-15: Near-term Conditions Highway Operations Summary—AM Peak-hour

Segment	Direction	Near Term		Near Term with 2018 Project	
		Volume	Delay Index	Volume	Delay Index
1. SR-4, between Arnold Industrial Place/Solano Way and SR-242	EB	3,050	1.00	3,064	1.00
	WB	5,270	2.07	5,301	2.12
2. SR-4, between SR-242 and Port Chicago Highway	EB	2,930	1.00	2,972	1.00
	WB ¹	5,590	5.39	5,683	6.00
3. SR-4, between Port Chicago Highway and Willow Pass Road	EB	3,570	1.00	3,612	1.00
	WB ¹	7,640	1.68	7,733	1.74
4. SR-4, between Willow Pass Road and San Marco Boulevard	EB	3,650	1.00	3,692	1.00
	WB ¹	10,840	4.29	10,933	4.52
5. SR-4, between San Marco Boulevard and Bailey Road	EB	3,320	1.00	3,334	1.00
	WB ¹	10,100	7.93	10,108	7.98
6. SR-4, between Bailey Road and Railroad Avenue	EB	3,410	1.00	3,448	1.00
	WB ¹	10,210	8.65	10,234	8.80

Note:
¹ AM peak-hour analysis reflects operation of the HOV lane, which carries approximately 13 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak-hour.
 Source: Fehr & Peers 2018.

Table 3.5-16: Near-term Conditions Highway Operations Summary—PM Peak-hour

Segment	Direction	Near Term		Near Term with 2018 Project	
		Volume	Delay Index	Volume	Delay Index
1. SR-4, between Arnold Industrial Place/Solano Way and SR-242	EB	6,080	1.34	6,119	1.35
	WB ¹	2,220	1.00	2,247	1.00
2. SR-4, between SR 242 and Port Chicago Highway	EB	11,160	5.57	11,277	6.03
	WB ¹	2,560	1.01	2,640	1.01
3. SR-4, between Port Chicago Highway and Willow Pass Road	EB	8,330	1.44	8,447	1.51
	WB ¹	5,130	1.01	5,210	1.01
4. SR-4, between Willow Pass Road and San Marco Boulevard	EB	6,330	1.01	6,447	1.02
	WB ¹	4,780	1.00	4,860	1.00
5. SR-4, between San Marco Boulevard and Bailey Road	EB	4,970	1.01	4,979	1.01
	WB ¹	4,180	1.00	4,202	1.00

Table 3.5-16 (cont.): Near-term Conditions Highway Operations Summary—PM Peak-hour

Segment	Direction	Near Term		Near Term with 2018 Project	
		Volume	Delay Index	Volume	Delay Index
6. SR-4, between Bailey Road and Railroad Avenue	EB	4,400	1.00	4,443	1.00
	WB ¹	4,240	1.00	4,296	1.00

Notes:
¹ PM peak-hour analysis reflects operation of the HOV lane, which carries approximately 13 percent of traffic volumes, reducing the number of mixed-flow lanes available during the PM peak-hour.
 Source: Fehr & Peers 2018.

Table 3.5-17: Near Term Conditions Highway Operations Summary—HOV Lane Volumes

Segment	Direction	Near Term		Near Term with 2018 Project	
		AM	PM	AM	PM
1. SR-4, between Arnold Industrial Place/Solano Way and SR-242	EB	—	—	—	—
	WB	—	—	—	—
2. SR-4, between SR-242 and Port Chicago Highway	EB	—	2,732	—	2,747
	WB	—	—	—	—
3. SR-4, between Port Chicago Highway and Willow Pass Road	EB	—	2,032	—	2,047
	WB	1,004	—	1,016	—
4. SR-4, between Willow Pass Road and San Marco Boulevard	EB	—	1,532	—	1,547
	WB	1,404	—	1,416	—
5. SR-4, between San Marco Boulevard and Bailey Road	EB	—	1,205	—	1,206
	WB	1,221	—	1,222	—
6. SR-4, between Bailey Road and Railroad Avenue	EB	—	1,106	—	1,112
	WB	1,221	—	1,224	—

Note:
Bold indicates volume exceeds desired volume of 600 vehicles per hour.
 Source: Fehr & Peers 2018.

Cumulative Conditions

Cumulative highway forecasts were developed based on the same method used to develop the cumulative intersection forecasts, both without and with the 2018 Project. The Cumulative Without and With the 2018 Project analysis results are presented in Table 3.5-18 and Table 3.5-19 for the AM and PM peak-hours, respectively, based on the estimates of cumulative traffic volumes, plus estimates of the 2018 Project traffic. In the Cumulative condition, operations of SR-4 are projected

to further degrade beyond the MTSO with a projected delay index greater than 2.5 on some segments during the AM and PM peak-hours. The addition of the 2018 Project traffic would worsen the delay index, resulting in a significant impact.

Table 3.5-18: Cumulative Conditions Highway Operations Summary—AM Peak-hour

Segment	Direction	Cumulative		Cumulative with 2018 Project	
		Volume	Delay Index	Volume	Delay Index
1. SR-4, between Arnold Industrial Place/Solano Way and SR-242	EB	3,800	1.01	3,814	1.01
	WB	6,600	7.45	6,607	7.51
2. SR-4, between SR-242 and Port Chicago Highway	EB	3,600	1.00	3,641	1.00
	WB ¹	6,800	13.00	6,822	13.00
3. SR-4, between Port Chicago Highway and Willow Pass Road	EB	4,400	1.00	4,441	1.00
	WB ¹	9,400	5.04	9,422	5.12
4. SR-4, between Willow Pass Road and San Marco Boulevard	EB	4,500	1.00	4,541	1.00
	WB ¹	13,400	13.00	13,422	13.00
5. SR-4, between San Marco Boulevard and Bailey Road	EB	4,100	1.00	4,114	1.00
	WB ¹	12,800	13.00	12,808	13.00
6. SR-4, between Bailey Road and Railroad Avenue	EB	4,200	1.00	4,234	1.00
	WB ¹	12,900	13.00	12,923	13.00

Notes:
¹ AM peak-hour analysis reflects operation of the HOV lane, which carries approximately 13 percent of traffic volumes, reducing the number of mixed-flow lanes available during the AM peak-hour.
 Source: Fehr & Peers 2018.

Table 3.5-19: Cumulative Conditions Highway Operations Summary—PM Peak-hour

Segment	Direction	Cumulative		Cumulative with 2018 Project	
		Volume	Delay Index	Volume	Delay Index
1. SR-4, between Arnold Industrial Place/Solano Way and SR-242	EB	7,600	3.00	7,640	3.08
	WB ¹	2,800	1.01	2,829	1.01
2. SR-4, between SR-242 and Port Chicago Highway	EB	13,800	13.00	13,919	13.00
	WB ¹	3,100	1.04	3,186	1.05
3. SR-4, between Port Chicago Highway and Willow Pass Road	EB	10,200	5.04	10,319	5.46
	WB ¹	6,300	1.04	6,386	1.50
4. SR-4, between Willow Pass Road and San Marco Boulevard	EB	7,700	1.13	7,819	1.15
	WB ¹	5,900	1.01	5,986	1.09

Table 3.5-19 (cont.): Cumulative Conditions Highway Operations Summary—PM Peak-hour

Segment	Direction	Cumulative		Cumulative with 2018 Project	
		Volume	Delay Index	Volume	Delay Index
5. SR-4, between San Marco Boulevard and Bailey Road	EB	6,300	1.08	6,309	1.08
	WB ¹	5,300	1.01	5,322	1.12
6. SR-4, between Bailey Road and Railroad Avenue	EB	5,500	1.03	5,550	1.03
	WB ¹	5,300	1.01	5,358	1.12

Notes:
¹ PM peak-hour analysis reflects operation of the HOV lane, which carries approximately 13 percent of traffic volumes, reducing the number of mixed-flow lanes available during the PM peak-hour.
 Source: Fehr & Peers 2018.

The amount of vehicle traffic in high-occupancy vehicle lanes was also assessed, as presented in Table 3.5-20, which shows that in both the AM and PM peak-hours, the volume of traffic in the HOV lane is above the desired MTSO standard of at least 600 vehicles per hour per lane. The project is expected to add traffic to these HOV lane segments.

Table 3.5-20: Cumulative Conditions Highway Operations Summary—HOV Lane Volumes

Segment	Direction	Cumulative		Cumulative with 2018 Project	
		AM	PM	AM	PM
1. SR-4, between Arnold Industrial Place/Solano Way and SR-242	EB	—	—	—	—
	WB	—	—	—	—
2. SR-4, between SR-242 and Port Chicago Highway	EB	—	2,600	—	2,615
	WB	—	—	—	—
3. SR-4, between Port Chicago Highway and Willow Pass Road	EB	—	1,900	—	1,915
	WB	1,100	—	1,103	—
4. SR-4, between Willow Pass Road and San Marco Boulevard	EB	—	1,400	—	1,415
	WB	1,500	—	1,503	—
5. SR-4, between San Marco Boulevard and Bailey Road	EB	—	1,200	—	1,201
	WB	1,500	—	1,501	—
6. SR-4, between Bailey Road and Railroad Avenue	EB	—	1,000	—	1,007
	WB	1,500	—	1,503	—

Note:
Bold indicates volume exceeds desired volume of 600 vehicles per hour.
 Source: Fehr & Peers 2018.

The 2018 Project is expected to worsen the delay index along the SR-4 corridor where deficient operations currently occur; these effects would occur in the Existing, Near-Term and Cumulative condition and is considered a significant impact. Additionally, the 2018 Project would contribute to worsening congestion on other highway segments not explicitly evaluated, including SR-242.

Caltrans plans to increase vehicle capacity along SR-4 from west of I-680 and east of SR-242, which would extend the high occupancy vehicle lane and add an additional mixed-flow lane in each direction. CCTA is in the process of selecting a contractor for the construction of this improvement, with project completion expected by 2021/2022.

Additionally, CCTA has developed the SR-4 Integrated Corridor Management (ICM) plan that includes strategies such as adaptive ramp metering, incident management, traffic and transit information systems, traffic arterial and transit information systems, connected vehicle technologies, and integration with the SR-4 corridor ICM to better manage traffic flows along the corridor. Payment of regional transportation impact fees to the East Contra Costa Regional Fee and Financing Authority would further the implementation of ICM. Mitigation Measure TRANS-4 requires the 2018 Project applicant to pay all adopted applicable transportation fees at the time building permits are sought; thus, these funds could be applied towards ICM. However, as full funding for these improvements has not been identified and the effectiveness of the ICM project is uncertain, the impact would remain significant and unavoidable.

Ramp Meter Analysis

An assessment of vehicle queues at the highway on-ramps where the 2018 Project traffic is concentrated was conducted, as presented in Table 3.5-21 for the Existing condition, Table 3.5-22 for the Near-Term condition, and Table 3.5-23 for the Cumulative condition. The on-ramps evaluated include:

1. SR-4 Westbound Ramps Loop On-ramp from northbound San Marco Boulevard south of Evora Road/Willow Pass Road
2. SR-4 Eastbound Ramps at Bailey Road

The ramp metering assessment was conducted based on general ramp metering rates provided from Caltrans and field observations. At the San Marco Boulevard loop on-ramp to westbound SR-4 in the AM peak-hour, the metering rate is 950 vehicles per hour, with two vehicles per green allowed to enter the highway. At the Bailey Road on-ramp to eastbound SR-4 during the PM peak-hour, the metering rate is 560 vehicles per hour.

Results of the assessment and field observations indicate that in the Existing Condition, vehicle queues extend from the westbound SR-4 ramp from southbound San Marco Boulevard to West Leland Road, and beyond to Tomales Bay Drive during the AM peak-hour. At the Bailey Road on-ramp to eastbound SR-4, maximum vehicle queues extend slightly beyond the on-ramp to Bailey Road. The addition of the 2018 Project traffic would exacerbate the level of vehicle queue spillback from both ramp meters.

In the Near-Term and Cumulative Conditions, vehicle queues are projected to worsen at the locations noted above if the metering rates are maintained at the same level, and the addition of the 2018 Project traffic would further exacerbate queue spillback.

Table 3.5-21: Ramp Meter Analysis—Existing Condition

On-Ramp	Peak-hour	Storage Length (ft)	Meter Rate	Existing without Project		Existing with 2018 Project	
				Metered Volume	Max Queue (ft)	Metered Volume	Max Queue (ft)
SB San Marco Boulevard to WB SR-4	AM	750	950 ¹	1,046	4,605	1,090	5,697
NB Bailey Road to EB SR-4 ²	PM	1,150	560	572	1,153	577	1,268

Notes:
¹ Ramp metering allows 2 cars per green for a total of 950 per hour
² Does not include the HOV by-pass volume
 SB = southbound
 NB = northbound
 WB = westbound
 EB = eastbound
Bold indicates vehicle queue spillback to roadway.
 Source: Fehr & Peers 2018.

Table 3.5-22: Ramp Meter Analysis—Near-Term Condition

On-Ramp	Peak-hour	Storage Length	Meter Rate	Near-Term without Project		Near-Term with 2018 Project	
				Metered Volume	Max Queue (ft)	Metered Volume	Max Queue (ft)
SB San Marco Boulevard to WB SR-4	AM	750	950	1,290	10,665	1,383	12,990
NB Bailey Road to EB SR-4 ¹	PM	1,150	560	594	1,672	614	2,162

Notes:
¹ Does not include the HOV by-pass volume
Bold indicates vehicle queue spillback to roadway.
 SB = southbound
 NB = northbound
 WB = westbound
 EB = eastbound
 Source: Fehr & Peers 2018.

Table 3.5-23: Ramp Meter Analysis—Cumulative Condition

On-Ramp	Peak-hour	Storage Length	Meter Rate	Cumulative without Project		Cumulative with 2018 Project	
				Metered Volume	Max Queue (ft)	Metered Volume	Max Queue (ft)
SB San Marco Boulevard to WB SR-4	AM	750	950	1,100	5,946	1,122	6,492
NB Bailey Road to EB SB-4 ¹	PM	1,150	560	606	1,960	631	2,551

Notes:
¹ Does not include the HOV by-pass volume
Bold indicates vehicle queue spillback to roadway.
 SB = southbound
 NB = northbound
 WB = westbound
 EB = eastbound
 Source: Fehr & Peers 2018.

Ramp Meter Impact—San Marco Boulevard Southbound Loop Ramp to SR-4 Westbound

Based on the ramp metering rate of 950 vehicles per hour, vehicle queues during both the AM and PM peak-hours spillback from beyond the SR-4 westbound on-ramp to San Marco Boulevard and along West Leland Road. The addition of the 2018 Project traffic in the Existing, Near-Term, and Cumulative Conditions would further increase the extent and duration of vehicle queues spillback from the ramp meter operations. As the addition of the 2018 Project traffic would increase a queue already exceeding the ramp storage, the impact is considered significant.

To mitigate the Existing, Near-Term, and Cumulative ramp metering impact, the following improvements would need to occur:

- Construct a second mixed-flow on-ramp lane
- Construct an HOV by-pass lane
- Extend West Leland Road to Willow Pass Road
- Increase the metering rate to approximately 1,040 vehicles per hour

This improvement would require widening of the on-ramp to accommodate two additional lanes at the ramp meter, as well as widening to provide additional merge space on the highway mainline. The widening of the highway on-ramp could result in secondary impacts to pedestrians and bicyclists by increasing pedestrian crossing distances through the interchange, and bicycle/vehicle conflicts. Mitigation Measure TRANS-4 requires the 2018 Project applicant to pay all adopted applicable transportation fees at the time building permits are sought; thus, funds could be applied towards these improvements. As these improvements are within the Caltrans right-of-way and the City of Pittsburg does not have control over the on-ramp, and funding has not been entirely secured to date, there are no assurances that this improvement could be implemented. Therefore, the impact is considered significant and unavoidable.

Ramp Meter Impact—Bailey Road at Eastbound SR-4

Based on the ramp metering rate of 560 vehicles per hour, vehicles queues during the PM peak-hour spillback from beyond the on-ramp to Bailey Road. The addition of the 2018 Project traffic in the existing, Near-Term and Cumulative Conditions would further increase the extent and duration of vehicle queues spillback from the ramp meter to Bailey Road. As the addition of the 2018 Project traffic would further exacerbate vehicle queue spillback, this is considered a significant impact.

In the Existing, Near-Term, and Cumulative Conditions, increasing the metering rate at this location from 560 vehicles per hour to between 570 and 625 vehicles per hour (depending on time period and analysis scenario) would reduce the duration and severity of vehicle queue spillback to Bailey Road such that queues could be contained within the available ramp storage. It is anticipated that the City of Pittsburg may work with Caltrans to evaluate ramp-metering rates along the SR-4 corridor to minimize the potential for vehicle queue spillback to City streets. However, as neither the 2018 Project applicant nor the City of Pittsburg has control over ramp meter rates in the project vicinity, there is no feasible mitigation and this impact is considered significant-and-unavoidable.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-4 Prior to issuance of building permits, the 2018 Project applicant shall pay all adopted applicable regional transportation related impact fees in accordance with the latest fee schedule, including the ECCRFFA.

Level of Significance After Mitigation

Significant unavoidable impact.

Roadway Safety

Impact TRANS-5: The 2018 Project may substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact Analysis

Fehr & Peers assessed the 2018 Project's impact on vehicle access and circulation. Access to the site is proposed from three locations on West Leland Road, including an extension of Alves Ranch Road north into the site that forms the fourth leg of an existing signalized intersection with West Leland Road. As part of the 2018 Project, this intersection would be modified to provide two left-turn lanes and a through-right shared lane on both the northbound and southbound approaches and a new crosswalk would be provided across the east leg of the intersection. The traffic signal would be modified to accommodate a new pedestrian phase and the changed lane geometries on the north and south legs of the intersection. This intersection would operate at acceptable service levels as proposed to be modified as part of the 2018 Project.

A full access unsignalized intersection is proposed as part of the 2018 Project on West Leland Road, west of Alves Ranch Road. This intersection would be off-set with Tomales Bay Drive on the south side of West Leland Road, which would remain a right-in/right-out side-street stop-controlled intersection. As detailed in the previous sections, this access roadway would operate at an overall acceptable LOS A through the Cumulative With 2018 Project Condition. However, poor operations may be experienced during the AM peak-hour for vehicles turning left from the project site to eastbound West Leland Road in the Near-Term and Cumulative Conditions. Neither turn restrictions or signalization is recommended as the intersection is projected to operate at an overall acceptable service level and vehicles have an alternative signalized access point to enter/exit the project site.

A secondary right-in/right-out access to the commercial site would also be provided as part of the 2018 Project from West Leland Road between Alves Ranch Road and roadway off-set with Tomales Bay Drive. The exact location of this driveway would be identified as the commercial parcel site plans are developed.

In addition to the vehicular access locations, an emergency vehicle access location would be provided as part of the 2018 Project on the eastern portion of the site, approximately 500 feet east of Alves Ranch Road.

Daily traffic volumes were forecast for numerous locations throughout the site. The northerly extension of Alves Ranch Road (Street A) into the project site is expected to carry over 3,000 vehicles per day between West Leland Road and the commercial entrance. Remaining streets are projected to accommodate lower traffic volumes, with Street B on the eastern portion of the site experiencing less than 1,700 vehicles per day, Street B connecting to the western portion of the site experiencing less than 1,000 vehicles per day, and Street E connecting the western neighborhood to West Leland Road experiencing less than 1,200 vehicles per day. Mitigation Measure TRANS-5a would ensure Alves Ranch Road is designed to Collector Street standards and all other streets are designed to Local Street standards so impacts to roadway safety are less than significant.

It is expected that as the plan is further refined, all-way and side-street stop-controlled intersections would be incorporated into the overall site plan, including the Street A/Commercial Center driveway, Street E/Street F intersections, and other intersections along primary routes of travel through the site.

As part of the 2018 Project, a 12-foot wide sidewalk would be constructed on the north side of West Leland Road along the residential project frontage, connecting to an existing sidewalk in the west; an interim pedestrian connection would be constructed along the future commercial frontage with full improvements constructed once the commercial site is developed. A new crosswalk across the east leg of West Leland Road would be constructed as part of the site access improvements, and the signal would be modified to accommodate the additional pedestrian phase. Class II bicycle facilities are provided on West Leland Road, which would not be altered as a result of the 2018 Project.

The City of Pittsburg Code also outlines off-street loading zone requirements for a variety of uses, as detailed in Section 18.78, which would apply to the 2018 Project. For single-family homes, no off-

street loading facilities are required. For commercial uses over 100,000 square feet, three loading spaces are required.

Refuse collection would be provided by Mount Diablo Resource Recovery being. For some homes, it is not clear where refuse containers would be staged and there could be conflicts on trash collection days between parked vehicles and refuse carts. To address this concern, implementation of Mitigation Measure TRANS-5b has been recommended. With this implementation, the impacts would be less than significant.

Construction related vehicles could result in temporary incompatible uses. Implementation of the City's Standard Construction Conditions of Approval would ensure that impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM TRANS-5a Prior to issuance of the first building permit, the applicant shall demonstrate that the Alves Ranch Road extension into the project site is designed to Collector Street standards, and all other streets are designed to Local Street standards.

MM TRANS-5b Prior to the issuance of the first grading permit, the applicant shall demonstrate (as shown on the final improvement plans) provide a refuse collection plan to that each home has a clear refuse collection staging area that considers the need for some on-street parking to be provided on refuse collection days.

Level of Significance After Mitigation

Less than significant impact.

Emergency Access

Impact TRANS-6: The 2018 Project would not result in inadequate emergency access.

Impact Analysis

The 2018 Project is not expected to result in inadequate emergency access, as access to the site would be provided from multiple locations and if one location were to be blocked, other means of access are provided. Additionally, the Fire Department has reviewed the site plan and has indicated that the proposed internal street cross-sections are sufficient for emergency vehicle circulation and adhere to applicable requirements and standards. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Public Transit, Bicycles, and Pedestrians

Impact TRANS-7: The 2018 Project may conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Impact Analysis

Public Transit

The center of the project site is located approximately 0.5-mile from a BART station and is adjacent to a TriDelta Transit stop. It is expected that given the 2018 Project's proximity to transit, some future site residents and employees would use transit on a regular basis. Pedestrian connections are provided from the project site to both the TriDelta Transit stops as well as the BART station. Mitigation Measure TRANS-7a would provide residents with information on local transit. Impacts would be less than significant.

Bicycles

Bicycle access to the site would be provided from existing Class II bicycle facilities on West Leland Road. No designated bicycle facilities are proposed on any of the roadways internal to the site, but as noted in the project description, the 2018 Project would include construction of a 12-foot-wide multi-use path along the West Leland Road frontage of the residential units. Short-term and long-term bicycle parking is required for the potential future commercial portion of the 2018 Project, and is based on the required amount of automobile parking, pursuant to Section 18.78.045 of the Pittsburg Municipal Code. This requirement is reflected in Mitigation Measure TRANS-7b. Impacts would be less than significant.

Pedestrians

Pedestrian access to the 2018 Project would be from West Leland Road. A 12-foot wide sidewalk would be constructed along the West Leland Road residential project frontage as part of the 2018 Project, with pedestrian connections provided at numerous locations, including a paseo between Lots 169 and 170, as well as sidewalks connecting from the neighborhoods to West Leland Road via Street A and Street E. An interim pedestrian connection would be constructed along the future commercial frontage with full improvements constructed at such time as the commercial site is developed. A new crosswalk would be constructed as part of the 2018 Project on the east leg of the West Leland Road at Alves Ranch Road intersection to provide a more direct connection to the transit stops on the south side of West Leland Road. This new crosswalk would also connect pedestrians to the sidewalk on the south side of West Leland Road connecting to the east. Mitigation Measure TRANS-7c would require prohibiting pedestrian crossing movements of West Leland Road at the new project roadway/Tomales Bay Drive, or would require the installation of a high visibility crosswalk across the west leg or the intersection and prohibit crossings at the east leg.

The 2018 Project would also provide a pedestrian and bicycle only connection to the east side of the site such that when the parcel to the east of the site is developed, a more direct pedestrian and bicycle connection would be provided to the BART station.

As such time as the potential future commercial site plan is developed, it is anticipated that the commercial portion of the 2018 Project would include pedestrian connections from West Leland Road, Street A, and at least one connection from Street B and Street F. Sidewalks are proposed on both sides of Street A and Street E throughout the site. For other streets, sidewalks are proposed on at least one side of the street. Given the low volume of vehicle traffic, on the local neighborhood streets, vehicle and pedestrian conflicts are expected to be minimal. It is also anticipated that the commercial developer would provide curb extensions (bulbouts) and directional curb ramps at several locations in the project site; it is anticipated that the final commercial site plan would include some additional designated pedestrian crossing locations, and where crosswalks only cross one leg of an intersection, directional curb ramps (as opposed to diagonal) would be provided. All of the foregoing improvements would be the responsibility of the development of the commercial component of the 2018 Project, and would be implemented at such time as the commercial component is constructed.

With the construction of a new access roadway on the western edge of the 2018 Project, off-set from Tomales Bay Drive, a new legal pedestrian crossing of West Leland Road would be created. Impacts would be less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

- MM TRANS-7a** Prior to issuance of building permits for the potential future commercial uses, the commercial project applicant shall prepare and submit plans to the City of Pittsburg demonstrating that a community kiosk is provided in a centrally located public space. The kiosk shall provide information about alternative modes of transportation including bicycling, walking, transit, and carpool programs or facilities.
- MM TRANS-7b** Prior to issuance of building permits for the potential future commercial uses, the commercial project applicant shall prepare and submit plans to the City of Pittsburg demonstrating that bicycle racks and lockers or secure room bicycle parking is provided based on the requirements outlined in Section 18.78.045 of the Pittsburg Municipal Code. Approximately 20 percent of the required bicycle parking shall be long-term parking for employee use.
- MM TRANS-7c** Prior to issuance of building permits for the 2018 Project, the residential project applicant shall demonstrate (as shown on final improvement plans) that it will either install signage and barricades prohibiting pedestrian crossing movements of West Leland Road at the new project roadway/Tomales Bay Drive on both the east and west legs of the intersection, or install a high visibility crosswalk with a pedestrian actuated flashing beacons or pedestrian hybrid signal across the west leg of the intersection and prohibit pedestrian crossings of the east leg through signage and barricades.

Level of Significance After Mitigation

Less than significant impact.

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SECTION 4: CUMULATIVE EFFECTS

4.1 - Introduction

California Environmental Quality Act (CEQA) Guidelines Section 15130 requires the consideration of cumulative impacts within an Environmental Impact Report (EIR) when a project’s incremental effects are cumulatively considerable. Cumulatively considerable means that “. . . the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.” In identifying projects that may contribute to cumulative impacts, *CEQA Guidelines* allow the use of a list of past, present, and reasonably anticipated future projects, producing related or cumulative impacts, including those that are outside of the control of the lead agency.

In accordance with CEQA Guidelines Section 15130(b), “. . . the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, the discussion need not provide as great [a level of] detail as is provided for the effects attributable to the project alone.” The discussion should be guided by standards of practicality and reasonableness, and it should focus on the cumulative impact to which the identified other projects contribute rather than on the attributes of other projects that do not contribute to the cumulative impact.

The 2004 Final EIR evaluated cumulative effects and found that the original project evaluated therein, in combination with other past, present, and reasonably anticipated future development projects, would result in cumulative impacts related to transportation, water service demand, sewage treatment capacity, park and recreation facilities, sensitive species and their habitats, and regional air emissions. The 2004 Final EIR concluded that the specific mitigation measures incorporated into the 2004 analysis would reduce any cumulative project contribution to a less than significant level, with the exception of the significant and unavoidable impacts identified in the 2004 Final EIR Executive Summary (Impact 5-1, 5-3, 7-2, 7-3, 7-6, 7-7, 7-8, 12-2, 14-3, and 15-2).

The 2018 Project’s cumulative impacts were considered in conjunction with other past, present, and reasonably anticipated future projects in the City of Pittsburg. Table 4-1 provides a list of the other projects considered in the cumulative analysis, which were provided by the City of Pittsburg and reflect projects that were active at the time of issuance of the Notice of Preparation.¹

Table 4-1: Cumulative Projects

Jurisdiction	Project	Characteristics	Status
City of Pittsburg	San Marco Village C	459 dwelling units medium density	Approved; Unbuilt
	San Marco Village D	171 dwelling units single-family	Approved; Under construction

¹ The list of projects is utilized where the geographic scope is more limited; cumulative effects related to air quality, for example, are evaluated within the geographic scope of the air basin.

Table 4-1 (cont.): Cumulative Projects

Jurisdiction	Project	Characteristics	Status
	San Marco Village E	107 dwelling units	Approved; 23 dwelling units built; 84 remaining
	San Marco Village F	100 dwelling units	Approved; 75 dwelling units built; 25 remaining
	San Marco Village M	300 dwelling units	Approved; Unbuilt
	San Marco Village N	64 dwelling units	Approved; Unbuilt
	San Marco Village O	115 dwelling units	Approved; Unbuilt
	San Marco Commercial Center	35,406 square feet commercial	Formal Application Submitted; Pending
	Bancroft Gardens II	28 dwelling units single-family	Formal Application Submitted; Pending
	Lawlor Estates	50 dwelling units single-family	Approved; 47 dwelling units built; 3 remaining
	Faria/Southwest Hills Annexation	1,500 single-family units	Formal application submitted; Final EIR is being prepared

4.2 - Cumulative Impact Analysis

The cumulative impact analysis below is guided by the requirements of CEQA Guidelines Section 15130. Key principles established by this section include:

- A cumulative impact only occurs from impacts caused by the proposed project and other projects. An EIR should not discuss impacts that do not result from the proposed project.
- When the combined cumulative impact from the increment associated with the proposed project and other projects is not significant, an EIR need only briefly explain why the impact is not significant; detailed explanation is not required.
- An EIR may determine that a project's contribution to a cumulative effect impact would be rendered less than cumulatively considerable if a project is required to implement or fund its fair share of mitigation intended to alleviate the cumulative impact.

The cumulative impact analysis that follows relies on these principles as the basis for determining the significance of the 2018 Project's cumulative contribution to various impacts, and in light of the prior cumulative analysis contained in the 2004 Final EIR.

4.2.1 - Air Quality

The geographic scope of the cumulative air quality emissions analysis is the San Francisco Bay Area Air Basin, which covers all or portions of the counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Sonoma, and Solano. Air quality is impacted by topography,

dominant air flows, atmospheric inversions, location, and season; therefore, using the San Francisco Bay Area Air Basin represents the area most likely to be impacted by air emissions. All of the projects listed in Table 4-1 would result in new air emissions, during construction and operations. The Air Basin is currently in non-attainment of the federal standards for ozone and PM_{2.5}, and is in non-attainment of the State standards for ozone, PM₁₀ and PM_{2.5}. Therefore, there is an existing cumulatively significant air quality impact with respect to these pollutants.

The 2004 Final EIR concluded that the project would result in a cumulative effect on regional air emissions (Impact 15-2). The 2004 Final EIR noted that Mitigation Measure 15-2 would reduce the project-level impacts, but because a sufficient reduction in air emissions could not be achieved (i.e., a 33 percent reduction), the residual contribution would remain cumulative considerable.

The 2018 Project was assessed for consistency with the Bay Area Air Quality Management District Clean Air Plan in Section 3.1, Air Quality. Refer to that section for further discussion. The 2018 Project was found to be consistent with all applicable provisions of the Clean Air Plan without the need for any mitigation.

The 2018 Project's cumulative criteria pollutant emissions were evaluated in Section 3.1, Air Quality, which may be referred to for further discussion. The 2018 Project's criteria pollutant emissions were found to be less than significant without the need for any mitigation.

The 2018 Project's toxic air contaminant emissions were also evaluated in Section 3.1, "Air Quality," which may be referred to for further discussion. Other projects listed in Table 4-1 may generate criteria pollutant emissions that contribute to violations of air quality standards. The 2018 Project's cumulative impact due to toxic air contaminant emissions were found to be less than significant with mitigation. The 2018 Project would not have a cumulatively considerable contribution to any significant cumulative impact with implementation of Mitigation Measure AIR-1 and AIR-2.

Therefore, the 2018 Project would result in a less than cumulatively considerable contribution to regional air emissions with implementation of Mitigation Measure AIR-1 and AIR-2. Therefore, the 2018 Project would have a reduced impact relative to the conclusion of the 2004 Final EIR.

4.2.2 - Biological Resources

The geographic scope of the cumulative biological resources analysis is the City of Pittsburg. The project site is located in an area characterized by urban development and infrastructure; accordingly, habitats in these areas tend to be characterized as highly disturbed, and impacts would be fairly localized. Recent development patterns and growth in the area have resulted in an existing cumulatively significant impact to biological resources due to the loss of potential habitat for rare, endangered, and threatened species.

The 2004 Final EIR concluded that the original project evaluated therein would not result in a cumulatively considerable contribution to any biological resources. Although the 2004 Final EIR noted that there could be cumulative impacts to sensitive species and their habitats, the implementation of project-specific mitigation including the preservation of 87 acres south of West Leland Road along with

other mitigation lands or the purchase of credits in an off-site mitigation bank, would reduce the original project's contribution to this cumulative impact to a less than significant level.

As discussed more fully in Section 3.2 of this Draft SEIR, the 2018 Project has the potential to have significant impacts on the following special-status wildlife species: western burrowing owl, Swainson's hawk, and nesting birds. Other projects listed in Table 4-1 may impact these species. Mitigation Measures BIO-1a, BIO-1b, and BIO-1c are proposed requiring pre-construction surveys for these species and implementation of protection measures if they are found to be present during the nesting season. The required mitigation would reduce the 2018 Project's contribution to any significant cumulative impact on special-status wildlife species to less than cumulatively considerable. Therefore, the conclusions from the 2004 Final EIR remain unchanged.

4.2.3 - Greenhouse Gas Emissions

An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macroscale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

To the extent a project's design features comply with or exceed the regulations outlined in the Scoping Plan and adopted by the Air Resources Board or other state agencies, a lead agency could appropriately rely on their use as showing compliance with 'performance based standards' adopted to fulfill 'a statewide . . . plan for the reduction or mitigation of greenhouse gas emissions' (CEQA Guidelines § 15064.4(a)(2), (b)(3)).

The 2004 Final EIR did not include a discussion of GHG emissions.

For purposes of this Draft SEIR, the geographic scope of the cumulative greenhouse gas (GHG) emissions analysis is the State of California. GHG emissions are regulated at the State level by the California Air Resources Board (ARB), and the Air Basin level by BAAQMD; therefore, the cumulative analysis uses the methodology developed by the BAAQMD for the San Francisco Bay Area Air Basin.

Implementation of the 2018 Project would generate GHG emissions that are associated with climate change. Other projects listed in Table 4-1 would generate GHG emissions. Estimated GHG emissions attributable to future development would be primarily associated with increases of CO₂ and, to a lesser extent, other GHG pollutants, such as CH₄ and N₂O. Sources of GHG emissions include area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste.

The 2018 Project's GHG emissions were evaluated in Section 3.3, Greenhouse Gas Emissions, which may be referred to for further discussion. At a project level, the 2018 Project would result in a significant and unavoidable impact related to GHG emissions. Mitigation is identified to reduce the impact, but emissions would remain above the BAAQMD threshold for service population.

Since the 2018 Project was found to exceed the thresholds of significance developed by the BAAQMD to be consistent with the goals of AB 32 and SB 32 to reduce GHG emissions. On this basis, the 2018 Project's contribution to climate change would be cumulatively considerable.

4.2.4 - Noise

The geographic scope of the cumulative noise analysis is the project vicinity, including existing developments to the west and south, the sensitive receptors residing in the projects listed in Table 3-1, as well as the traffic noise generated at local intersections included in the transportation analysis.

The 2004 Final EIR concluded that the project would result in a cumulative effect on construction noise (Impact 14-3). The 2004 Final EIR set forth Mitigation Measure 14-3, which requires standard construction noise abatement measures, but concluded that it would not fully reduce the impacts to a level of less than significant. Thus, the 2004 project was found to have a cumulatively considerable contribution to temporary increases in ambient noise levels.

Noise impacts tend to be localized; therefore, the area near the project site (approximately 0.25 mile) would be the area most affected by project activities. Furthermore, given the properties and the distance between other projects (more than 0.5 mile away), project-related noise would not combine with other sources further away. Outdoor noise measurements taken at the project site indicate that the average existing ambient noise levels are within the "normally acceptable" or "conditionally acceptable" range for all land uses, other than those portions of the site within approximately 300 feet of the centerline of SR-4. However, the 2018 Project would not contribute any significant increase in the ambient noise levels in this impacted area. Therefore, there is no existing cumulatively significant noise impact in the project vicinity.

The 2018 Project's construction noise levels may cause a temporary substantial increase in noise levels at nearby receptors. Other projects listed in Table 4-1 would generate construction noise. Mitigation is proposed that would require implementation of construction noise attenuation measures to reduce noise levels.

It is highly unlikely that a substantial number of the cumulative projects would be constructed simultaneously, since the projects are at widely varying stages of approval and development. Even if some of the construction schedules were to overlap with the 2018 Project, all of the cumulative project sites are located a sufficient distance from the project (more than 1,000 feet away) that the distance would diminish any additive effects. Construction noise would generally be limited to daytime hours and would be relatively short-term in duration. Therefore, construction noise from the 2018 Project would not combine with noise from other cumulative development projects to cause cumulatively significant noise impacts.

The 2018 Project's construction and operational vibration levels would not exceed annoyance thresholds and would be less than significant. Other projects listed in Table 4-1 would generate construction vibration. Because vibration is a highly localized phenomenon, there would be no reasonable possibility for vibration associated with the 2018 Project to combine with vibration from other cumulative projects because of their distances from the project site. Therefore, the 2018 Project would not contribute considerably to a cumulatively significant vibration impact.

The 2018 Project's cumulative roadway noise impacts were evaluated in Section 3.4, Noise. Refer to that section for further discussion. Based on the traffic modeling results summarized in Table 3.4-6, traffic noise levels under cumulative traffic conditions would exceed conditionally acceptable noise levels for residential land uses along portions of West Leland Road from San Marcos Boulevard to Woodhill Drive (resulting noise levels ranging from 70.8 dBA to 71.1 dBA L_{dn}). However, the modeling results show that the 2018 Project would contribute less than a 1 dBA increase to this cumulatively impacted condition. Therefore, while the 2018 Project would contribute some degree of roadway noise once the 2018 Project is implemented, given the relatively nominal amount, this would not have a cumulatively considerable contribution to ambient noise levels.

The 2018 Project's operational noise impacts from stationary noise sources were evaluated in Section 3.4, Noise. Refer to that section for further discussion. The analysis shows that none of the stationary noise sources would result in exceedances of the existing ambient noise levels as measured at any sensitive receptor in the project vicinity. Therefore, the 2018 Project stationary noise sources would not contribute to a cumulatively significant noise impact. Therefore, the 2018 Project, in conjunction with other cumulative projects, would not have a cumulatively significant impact related to noise or vibration impacts.

4.2.5 - Transportation

The geographic scope of the cumulative transportation analysis is the City of Pittsburg, specifically build out of the City pursuant to the growth anticipated in the General Plan. Section 3.5, Transportation, analyzes the 2018 Project's traffic impacts on intersection operations and freeway segments under a cumulative scenario, which accounts for ambient growth and forecasted traffic generated by other cumulative developments in combination with traffic generated by the 2018 Project. The 2018 Project would contribute new trips to facilities that would operate at unacceptable levels under Near-Term With Project Conditions and Cumulative With Project Conditions, and it would contribute new trips to Congestion Management Program facilities that would operate at unacceptable levels (freeways). All feasible mitigation measures are proposed to mitigate impacts; however, in certain cases, it would not fully mitigate the impact to a level of less than significant. In other cases, no feasible mitigation is available. Certain feasible mitigation measures require the cooperation of third-party agencies, which is not assured. Therefore, the 2018 Project, in combination with other past, present, and reasonably anticipated future developments, would result in a significant and unavoidable cumulative traffic impact, and the 2018 Project would result in a cumulatively considerable contribution to that impact. Please refer to Section 3.5, Transportation, for a comprehensive discussion of cumulative traffic impacts and for further discussion.

For other transportation-related areas (air traffic patterns, emergency access, and roadway safety hazards), the 2018 Project would have potentially significant impacts related to roadway hazards and alternative transportation, but after the implementation of mitigation measures, these impacts would be reduced to a level of less than significant. It is reasonable to assume that other cumulative projects that result in similar impacts would be required to mitigate for their impacts, which would help ensure there is no cumulative impact in this regard. For these reasons, it is concluded there is no cumulative significant impact in this regard. Furthermore, because the 2018 Project can mitigate all other transportation impacts to a level of less than significant, it would not have a cumulatively considerable contribution to any significant cumulative impact relative to these other topics.

SECTION 5: ALTERNATIVES TO THE PROPOSED PROJECT

5.1 - Introduction

In accordance with California Environmental Quality Act (CEQA) Guidelines Section 15126.6, this Draft Supplemental Environmental Impact Report (Draft SEIR) contains an impact assessment of alternatives to the proposed project (2018 Project) as compared to the alternatives analysis contained in the 2004 Final EIR. The primary purpose of an alternatives analysis is to provide decision makers and the general public with a reasonable range of potentially feasible project alternatives that could attain most of the basic project objectives, while avoiding or reducing any of the significant adverse environmental effects. Important considerations for an alternatives analysis are noted below (as stated in CEQA Guidelines § 15126.6).

- An EIR need not consider every conceivable alternative to a project;
- An EIR should identify alternatives that were considered by the lead agency, but rejected as infeasible during the scoping process;
- Reasons for rejecting an alternative include:
 - Failure to meet most of the basic project objectives;
 - Infeasibility; or
 - Inability to avoid significant environmental effects.

Here and as described more fully below, for purposes of the analysis in this Draft SEIR, it evaluates whether changes to the 2018 Project (and/or changes in the circumstances surrounding the 2018 Project) would require additional evaluation, either in terms of the alternatives considered and/or the comparative assessment between the identified alternatives and the 2018 Project, with the focus being on the incremental difference between what was previously studied in the 2004 Final EIR and the proposed 2018 Project.

5.1.1 - Significant Unavoidable Impacts

The 2018 Project would result in the following significant unavoidable impacts:

- **Near-Term Traffic Conditions:** The 2018 Project would contribute new vehicle trips to intersections that would operate at deficient levels of service under Near-Term conditions. Mitigation is proposed to improve operations to acceptable levels; however, because implementation of improvements requires the cooperation of third party agencies and for purposes of a conservative analysis, the residual significance of this impact is significant unavoidable.
- **Cumulative Traffic Conditions:** The 2018 Project would contribute new vehicle trips to intersections that would operate at deficient levels of service under cumulative conditions. Mitigation is proposed to improve operations to acceptable levels; however, because implementation of improvements requires the cooperation of third party agencies and for

purposes of a conservative analysis, the residual significance of this impact is significant unavoidable.

- **Congestion Management Plan Facilities:** The 2018 Project would contribute new vehicle trips to State Route 4 (SR-4) mainline segments and ramps that would operate at deficient levels of service. Mitigation is proposed to improve operations to acceptable levels; however, because implementation of improvements requires the cooperation of third party agencies and for purposes of a conservative analysis, the residual significance of this impact is significant unavoidable.
- **Greenhouse gas emissions:** Annual operational greenhouse gas (GHG) emissions for the year 2021 and 2030 would exceed the applicable Bay Area Air Quality Management District (BAAQMD) service population threshold. The impact would be reduced with implementation of Mitigation Measure GHG-1, but the impact would remain significant and avoidable.

The 2004 Final EIR identified transportation impacts at local intersections as a significant unavoidable impact, and also identified several other significant unavoidable impacts that would either be avoided by the 2018 Project, or would be reduced to less than significant through the application of feasible mitigation, as summarized below:

- **Impact 5-3: Visual relationship to electrical transmission line.** A significant and unavoidable impact was identified for specific residential uses proposed south of West Leland Road. The 2018 Project is located more than 200 feet from the easement established for this utility. As such, this impact does not apply to the 2018 Project.
- **Impact 8-1: Adequate water supply.** A significant and unavoidable impact was identified based on uncertainty regarding adequate water supply because the project site had not yet been annexed into the Central Valley Project Contractual Service Area. The City of Pittsburg 2015 Water System Master Plan accounts for the development of the project site and therefore confirms that an adequate water supply now exists to serve the 2018 Project.
- **Impact 12-2: Possible destruction of an historic resource.** The potentially historic structure was located south of West Leland Road and would not be affected by the 2018 Project.
- **Impact 14-3: Construction noise.** A significant and unavoidable impact was identified in the 2004 Final EIR based on the length of construction (6-15 years.) The 2018 Project would result in a standard construction period of less than 2 years and would be subject to the City’s standard construction hours, per the applicable provisions in the General Plan and Municipal Code. Therefore, the 2018 Project would not result in a significant and unavoidable impact related to construction noise.

5.1.2 - Alternatives Evaluated in Vista Del Mar Project EIR

Table 5-1 summarizes the alternatives considered in the 2004 Vista Del Mar EIR in terms of end uses contemplated for the project site.

Table 5-1: Summary of Vista Del Mar EIR Alternatives

Alternative	Description
1—No Project Alternative	No development would occur; Project site remains undeveloped
2—Existing Entitlements Alternative	449 multi-family residential dwelling units 206,000 square feet of office 51,500 square feet of retail
3—Option A Alternative	332 multi-family residential dwelling units 206,000 square feet of office 51,500 square feet of retail
4—Option B Alternative	225 multi-family residential dwelling units 206,000] square feet of office 51,500 square feet of retail
5—Reconfigured Project Layout	Suggested several revisions to areas located south of West Leland Road, and outside the 2018 Project site. This alternative is no longer applicable.
Source: FCS 2019.	

In Accordance with CEQA Guidelines Section 15126.6 (a), the 2004 Final EIR identified five alternatives that could avoid or substantially lessen the impacts of the 2004 project, three of which would also feasibly attain most of the basic project objectives. (As noted in Table 5-1, the Reconfigured Layout Alternative primarily involved areas south of West Leland Road and would not be applicable to the 2018 Project.)

CEQA Guidelines Section 15163 establishes that Supplemental EIRs “need only contain the information necessary to make the previous EIR adequate for the project as revised.” In this case, the 2004 Final EIR considered a no project alternative and three development alternatives that provided a reasonable range of potentially feasible scenarios that could reduce or avoid the identified impacts.

As described more fully in Section 2.0, Project Description, the 2018 Project is similar in nature than the project evaluated in the 2004 Final EIR, as are the identified significant impacts (as discussed above and throughout this Draft SEIR). The 2004 Final EIR assumed a total of 563 residential units north of West Leland Road, while the 2018 Project proposes 356 residential units. The 2004 Final EIR assumed a total of 206,000 square feet of office uses and 51,500 square feet of retail uses north of West Leland Road, while the 2018 Project proposes up to 140,000 square feet of commercial, including a 40,000-square-foot grocery store.

As shown in Table 5-1, the alternatives studied in the 2004 Final EIR included a reasonable range of residential uses (225 units, 332 units, and 449 units), as well as consideration of commercial and office uses, for purposes of providing a thoughtful comparative assessment, which remain valid for the purposes of evaluating the 2018 Project.

The 2018 Project would result in new significant and unavoidable impacts, in the area of transportation and greenhouse gases. However, the transportation impacts are in line with what

was studied previously, and reflect the current roadway network and current congestion levels in the project vicinity. In regards to GHG emissions, this topic was not studied in the 2004 Final EIR. GHG emissions are primarily related to transportation and as such the range of alternatives remain valid to evaluate this topic area.

The 2004 Final EIR did not include any alternatives that were initially considered, but ultimately not evaluated further. Therefore, no previously considered alternative might now be considered feasible. Furthermore, the basis for rejecting the alternatives evaluated remains valid for purposes of the 2018 Project, given its nature and the identified significant impacts, as discussed above and as compared to what was previously studied in the 2004 Final EIR.

SECTION 6: OTHER CEQA CONSIDERATIONS

6.1 - Significant Unavoidable Impacts

California Environmental Quality Act (CEQA) Guidelines Section 15126.2(a)(b) requires an Environmental Impact Report (EIR) to identify and focus on the significant environmental effects of the proposed project, including effects that cannot be avoided if the proposed project were implemented.

This section describes significant impacts, including those that can be mitigated but not reduced to a level of less than significant. Where there are impacts that cannot be alleviated without imposing a project alternative, their implications, and the reason why the 2018 Project is being proposed, notwithstanding their effect, is described.

The 2004 Final EIR identified transportation impacts at local intersections as a significant unavoidable impact, and also identified several other significant unavoidable impacts that would either be avoided by the 2018 Project, or would be reduced to less than significant through the application of feasible mitigation, as summarized below:

- **Impact 5-3: Visual relationship to electrical transmission line.** A significant and unavoidable impact was identified in the 2004 Final EIR for specific residential uses proposed south of West Leland Road. The 2018 Project is located more than 200 feet from the easement established for this utility. As such, this impact does not apply to the 2018 Project.
- **Impact 8-1: Adequate water supply.** A significant and unavoidable impact was identified based on uncertainty regarding adequate water supply because the project site had not yet been annexed into the Central Valley Project Contractual Service Area. The City of Pittsburg 2015 Water System Master Plan accounts for the development of the project site and therefore confirms that an adequate water supply now exists to serve the project.
- **Impact 12-2: Possible destruction of an historic resource.** The potentially historic structure was located south of West Leland Road and would not be affected by the 2018 Project.
- **Impact 14-3: Construction noise.** A significant and unavoidable impact was identified in the 2004 Final EIR based on the length of construction (6-15 years). The 2018 Project would result in a standard construction period of less than 2 years and would be subject to the City's standard construction hours, per the applicable provisions in the General Plan and Municipal Code. Therefore, the 2018 Project would not result in a significant and unavoidable impact related to construction noise.

With implementation of the 2018 Project, the following significant impacts that cannot be avoided would occur:

- **Near-Term Traffic Conditions:** The 2018 Project would contribute new vehicle trips to intersections that would operate at deficient levels of service under Near-Term conditions.

Mitigation is proposed to improve operations to acceptable levels; however, because implementation of improvements requires the cooperation of third-party agencies, for purposes of a conservative analysis, the residual significance of this impact is significant unavoidable.

- **Cumulative Traffic Conditions:** The 2018 Project would contribute new vehicle trips to intersections that would operate at deficient levels of service under cumulative conditions. Mitigation is proposed to improve operations to acceptable levels; however, because implementation of improvements requires the cooperation of third-party agencies, for purposes of a conservative analysis, the residual significance of this impact is significant unavoidable.
- **Congestion Management Plan Facilities:** The 2018 Project would contribute new vehicle trips to State Route 4 mainline segments and ramps that would operate at deficient levels of service. Mitigation is proposed to improve operations to acceptable levels; however, because implementation of improvements requires the cooperation of third-party agencies, for purposes of a conservative analysis, the residual significance of this impact is significant unavoidable.

6.2 - Growth-Inducing Impacts

There are two types of growth-inducing impacts that a project may have: direct and indirect. To assess the potential for growth-inducing impacts, the project's characteristics that may encourage and facilitate activities that individually or cumulatively may affect the environment must be evaluated (CEQA Guidelines § 15126.2(d)).

Direct growth-inducing impacts occur when the development of a project imposes new burdens on a community by directly inducing population growth, or by leading to the construction of additional developments in the same area. Also included in this category are projects that remove physical obstacles to population growth (such as a new road into an undeveloped area or a wastewater treatment plant with excess capacity that could allow additional development in the service area). Construction of these types of infrastructure projects cannot be considered isolated from the development they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth may provide a catalyst for future unrelated development in an area such as a new residential community that requires additional commercial uses to support residents.

This section summarizes the conclusions of the 2004 Final EIR with respect to growth inducing impacts, and then assesses whether the 2018 Project would induce substantial population growth directly, indirectly, or through the removal of a physical barrier to growth beyond which was already evaluated in the 2004 Final EIR.

The 2004 Final EIR noted that the project would add buildings, landscaping, infrastructure, and other improvements in support of a total of 1,100 housing units and approximately 257,500 square feet of business commercial uses. The project would result in housing for an estimated 3,202 people, and commercial areas would provide an estimated 644 jobs. The 2004 Final EIR concluded that the planned development would continue the trend toward urbanization of the Southwest Hills, consistent with the City of Pittsburg General Plan land use maps. The 2004 Final EIR noted that substantial urbanization of this area has already occurred and additional development is already

approved and under construction. The 2004 Final EIR noted that the roadways, utilities, and public services provided by the original project and other surrounding development could lead to increased pressure for the continued urbanization of the area; however, these growth trends were consistent with the General Plan, and that the cumulative effects of these developments were addressed in the certified 2001 General Plan EIR and would not result in a new impact related to growth inducement.

The 2018 Project would implement the remainder of the 2004 Vista Del Mar development, consistent with the land uses envisioned in the General Plan. Using the City of Pittsburg's average household size of 3.38 persons, the 2018 Project would add 1,204 persons to the City's population, which is within the 3,202 population projected in the 2004 Final EIR. This population would be an increase of 1.6 percent relative to the 2018 population estimate of 72,647, which would not be a significant increase. Furthermore, approximately two-thirds of project site is designated "High Density Residential" by the General Plan, which assumes an average density for this land use designation to be 20 units per gross acre; as such under the current General Plan designation, approximately 800 new units could be constructed, resulting in a hypothetical population increase of over 2,700. For these reasons, direct population growth induced by the 2018 Project would be considered less than significant.

The 2018 Project also includes up to 140,000 square feet of commercial space, which is within the 257,000 square feet evaluated in the 2004 Final EIR. The 2004 Final estimated buildout employment at 644. Using a standard employment rate of one employee per 500 square feet of commercial space, the project would create approximately 280 employment opportunities. The California Employment Development Department estimated that the Contra Costa County workforce totaled approximately 573,900 workers as of November 2018. Of this figure, 556,600 persons were employed and 17,300 persons were unemployed. Thus, the regional workforce is both large enough and has enough available labor such that the proposed 2018 Project's new employment opportunities can be filled without substantial growth inducement from outside areas.

Lastly, the 2018 Project is within the Pittsburg City limits and is surrounded by existing urban infrastructure (e.g., roads, storm drainage, potable water, sewer, electricity, and natural gas). As such, the development of the proposed 2018 Project would not constitute the removal of a physical barrier to growth. Therefore, impacts would be less than significant, similar to the conclusions in the 2004 Final EIR. Therefore, no further analysis is warranted.

6.3 - Energy Conservation

The 2004 Final EIR did not include a discussion of Energy Conservation.

As further explained in Section 1 of this Draft Supplemental EIR (Draft SEIR), CEQA includes a presumption against requiring any further environmental review once an EIR has been prepared and certified for a project, and does not generally require an analysis of revisions made to laws or regulations after certification of the EIR. Furthermore, this Draft SEIR meets the content requirements for purposes of CEQA in effect when it was set out for public review. Nevertheless, for purposes of a conservative analysis, the City of Pittsburg recognizes that the California Code of

Regulations¹ were recently amended. Therefore, in the City’s discretion as the lead agency, in an abundance of caution and to ensure full disclosure, this Draft SEIR includes consideration of Energy Conservation utilizing the 2019 CEQA Guidelines Appendix F.

Public Resources Code Section 21100(b)(3) and CEQA Guidelines Section 15126.4 require EIRs to describe, where relevant, the wasteful, inefficient, and unnecessary consumption of energy caused by a project. In 1975, largely in response to the oil crisis of the 1970s, the State Legislature adopted Assembly Bill (AB) 1575, which created the California Energy Commission (CEC). The statutory mission of the CEC is to forecast future energy needs, license thermal power plants of 50 megawatts or larger, develop energy technologies and renewable energy resources, plan for and direct State responses to energy emergencies, and—perhaps most importantly—promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards. AB 1575 also amended Public Resources Code Section 21100(b)(3) to require EIRs to consider the wasteful, inefficient, and unnecessary consumption of energy caused by a project. Thereafter, the State Resources Agency created Appendix F of the CEQA Guidelines. Appendix F is an advisory document that assists EIR preparers in determining whether a project will result in the inefficient, wasteful, and unnecessary consumption of energy. Under the updated CEQA Guidelines Section 15126.2, the EIR shall evaluate the project’s energy use to determine whether it would result in the significant environmental effects due to wasteful, inefficient, and unnecessary use of energy, or wasteful use of energy resources. This analysis is subject to the rule of reason and shall focus on energy use that is caused by the project.

For the reasons set forth below, this Draft SEIR concludes that the proposed 2018 Project would not result in the wasteful, inefficient, and unnecessary consumption of energy, would not cause the need for additional natural gas or electrical energy-producing facilities, and, therefore, would not create a significant impact on energy resources.

6.3.1 - Regulatory Setting

Federal and state agencies regulate energy use and consumption through various means and programs. At the federal level, the United States Department of Transportation, the United States Department of Energy, and the United States Environmental Protection Agency (EPA) are three federal agencies with substantial influence over energy policies and programs. Generally, federal agencies influence and regulate transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy-related research and development projects, and through funding for transportation infrastructure improvements. At the State level, the California Public Utilities Commission (CPUC) and the CEC are two agencies with authority over different aspects of energy. The CPUC regulates privately owned utilities in the energy, rail, telecommunications, and water fields. The CEC collects and analyzes

¹ Pursuant to CEQA Guidelines Section 15007(a), the Guidelines have recently been amended. Subpart (c) of Section 15007 provides: “If a document meets the content requirements in effect when the document is set out for public review, the document shall not need to be revised to conform to any new content requirements in guideline amendments taking effect before the document is finally approved.” Pursuant to subpart (b) of Section 15007, “Amendments to the guidelines apply prospectively only. New requirements in amendments will apply to steps in the CEQA process not yet undertaken by the date when agencies must comply with the amendments.” Pursuant to subpart (d) of Section 15007, public agencies must comply with guideline amendments beginning with the earlier of the following two dates: the effective date of the agency’s procedures to conform to the new guideline amendments, or 120 days after the amended guidelines become effective.

energy-related data, prepares statewide energy policy recommendations and plans, promotes and funds energy efficiency programs, and adopts and enforces appliance and building energy efficiency standards. California is exempt under federal law from setting State fuel economy standards for new on-road motor vehicles. Some of the more relevant federal and State energy-related laws and plans are discussed below.

Federal Energy Policy and Conservation Act

The Federal Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the United States would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic and Safety Administration (NHTSA), which is part of the United States Department of Transportation, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model; rather, compliance is determined on the basis of each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. The Corporate Average Fuel Economy (CAFE) program, which is administered by EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer, based on city and highway fuel economy test results and vehicle sales. On the basis of the information generated under the CAFE program, the United States Department of Transportation is authorized to assess penalties for noncompliance. In the course of its over 30-year history, this regulatory program has resulted in vastly improved fuel economy throughout the nation's vehicle fleet.

Title 24, Energy Efficiency Standards

Title 24, which was promulgated by the CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption, provides energy efficiency standards for residential and nonresidential buildings. According to the CEC, since the energy efficiency standards went into effect in 1978, it is estimated that California residential and nonresidential consumers have reduced their utility bills by at least \$15.8 billion. The CEC further estimated that by 2011, residential and nonresidential consumers will have saved an additional \$43 billion in energy costs.

For purposes of reference, single-family homes built to the newly adopted 2016 standards (which went into effect on January 1, 2017) will use about 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards. In 30 years, California will have saved enough energy to power 2.2 million homes, reducing the need to build 12 additional power plants.

Because the adoption of Title 24 post-dates the adoption of AB 1575, it has generally been the presumption throughout the State that compliance with Title 24 (as well as compliance with the federal and State regulations discussed above) ensures that projects will not result in the inefficient,

wasteful, and unnecessary consumption of energy. As is the case with other uniform building codes, Title 24 is designed to provide certainty and uniformity throughout the State while ensuring that the efficient and non-wasteful consumption of energy is carried out through design features. Large infrastructure transportation projects that cannot adhere to Title 24 design-build performance standards may, depending on the circumstances, undertake a more involved assessment of energy conservation measures in accordance with some of the factors set forth in Appendix F of the CEQA Guidelines. As an example, pursuant to the California Department of Transportation CEQA implementation procedures and Federal Highway Administration (FHWA) Technical Advisory 6640.8A, a detailed energy study is generally only required for large-scale infrastructure projects. However, for the vast majority of residential and nonresidential projects, adherence to Title 24 is deemed necessary to ensure that no significant impacts occur from the inefficient, wasteful, and unnecessary consumption of energy. As a further example, the adoption of federal vehicle fuel standards, which have been continually improved since their original adoption in 1975, have also protected against the inefficient, wasteful, and unnecessary use of energy.

6.3.2 - Energy Requirements of the 2018 Project

Short-term construction and long-term operational energy consumption are discussed below. This analysis takes into account all phases and components of the 2018 Project, including transportation-related energy, during construction and operation.

Short-Term Construction

The Federal Energy Policy and Conservation Act of 1975 sought to ensure that all vehicles sold in the United States would meet certain fuel economy goals. Through this Act, Congress established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the NHTSA, which is part of the United States Department of Transportation, is responsible for establishing additional vehicle standards and for revising existing standards. Since 1990, the fuel economy standard for new passenger cars has been 27.5 miles per gallon. Since 1996, the fuel economy standard for new light trucks (gross vehicle weight of 8,500 pounds or less) has been 20.7 miles per gallon. Heavy-duty vehicles (i.e., vehicles and trucks over 8,500 pounds gross vehicle weight) are not currently subject to fuel economy standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model; rather, compliance is determined on the basis of each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. The CAFE program, which is administered by the EPA, was created to determine vehicle manufacturers' compliance with the fuel economy standards. The EPA calculates a CAFE value for each manufacturer, based on city and highway fuel economy test results and vehicle sales. On the basis of the information generated under the CAFE program, the United States Department of Transportation is authorized to assess penalties for noncompliance. In the course of its over 30-year history, this regulatory program has resulted in vastly improved fuel economy throughout the nation's vehicle fleet.

California Code of Regulations Title 13, Sections 2449(d)(3) and 2485, limit idling from both on-road and off-road diesel-powered equipment and are enforced by ARB. The 2018 Project would be required to comply with these regulations. As discussed in Section 3.1, Air Quality, Mitigation Measure AIR-2a also restricts idling times, further supporting the reduction of construction energy impacts. Therefore,

it is anticipated that the construction phase of the proposed 2018 Project would not conflict with State or local renewable or energy efficiency objectives.

Long-Term Operations

Long-term operational energy consumption would occur in two forms: transportation demand and building energy demand. Each is discussed separately.

Transportation Energy Demand

Vehicle fuel efficiency is regulated at the federal level. Pursuant to the Federal Energy Policy and Conservation Act of 1975, the NHTSA is responsible for establishing additional vehicle standards and for revising existing standards. The NHTSA indicated that average fuel economy for passenger vehicle was 35.1 miles per gallon.

The 2018 Project would generate vehicle trips that would consume energy in the form of transportation fuel (gasoline and diesel). Vehicle fuel efficiency standards are set at the federal level and vehicles serving the 2018 Project would be subject to these standards. Table 6-1 summarizes the anticipated project transportation energy demand. The estimated demand was based on the vehicle miles traveled estimated in the CalEEMod model for all project components and is informed by the trip generation estimates in the traffic study. These miles are then multiplied by the average fuel economy discussed above. Motor vehicle trips associated with the 2018 Project would consume approximately 510,324 gallons of gasoline or diesel annually.

Table 6-1: Transportation Energy Demand Estimate for 2018 Project

Annual Vehicle Miles Traveled	Average Fuel Economy (miles per gallon)	Annual Fuel Consumption (gallons)
17,912,375	35.1	510,324
Notes: Annual vehicle miles traveled (VMT) provided by Fehr & Peers; VMT accounts for all 2018 Project-related trips Average Fuel Economy provided by National Highway Traffic Safety Administration Source: FirstCarbon Solutions (FCS) 2019.		

The 2018 Project contains a number of elements that would have the effect of reducing vehicle miles traveled and, by extension, the consumption of transportation fuel. The 2018 Project contemplates the following mobility enhancements:

- A Class I trail would be installed along West Leland Road as well as sidewalks connecting from the neighborhoods to West Leland Road via Street A and Street E. This would create new opportunities for non-motorized travel.
- A crosswalk would be constructed on the east leg of the West Leland Road at Alves Ranch Road intersection. This new crosswalk would also connect pedestrians to the sidewalk on the south side of West Leland Road connecting to the east and would provide a more direct connection to transit stops on the south side of West Leland Road. This would create more opportunities for transit travel.

Other CEQA Considerations

- Sidewalks are proposed on both sides of Street A and Street E throughout the site. For other streets, sidewalks are proposed on at least one side of the street. This would create new opportunities for non-motorized travel.
- Bicycle access to the site would be provided through existing Class II bicycle facilities on West Leland Road. This would create new opportunities for bicycle travel.
- The future commercial portion of the 2018 Project would be required to comply with the applicable Pittsburg Municipal Code requirements for bicycle parking. This would create new opportunities for bicycle travel.
- The project site is located approximately 0.5 mile from a Bay Area Rapid Transit (BART) station and a TriDelta Transit stop. The 2018 Project would also provide a pedestrian and bicycle only connection to the parcel on the east side of the site such that when the parcel to the east of the site is developed, a more direct pedestrian and bicycle connection would be provided to the BART station. This would create more opportunities for transit travel.

In summary, buildout of the 2018 Project would not result in the unnecessary, wasteful, or inefficient use of diesel or gasoline.

Building Energy Demand

Marin Clean Energy (MCE) and Pacific Gas & Electric Company (PG&E) would provide electricity and natural gas to 2018 Project. Table 6-2 provides an estimate of the 2018 Project’s annual energy consumption. These figures were derived from energy consumption rates provided by the United States Energy Information Administration. The non-residential energy usage estimates are based on national consumption figures for commercial buildings that operate continuously. Estimates for non-residential uses likely overstate actual consumption, because they include structures located in different climate regions or states with less stringent energy efficiency standards than California.

The residential electricity and natural gas consumption rates are based on data derived from the Residential Appliance Saturation Survey. The non-residential electricity and natural gas consumption rates are based on data from the California Commercial End Use Survey database.

Table 6-2: Estimated Annual Energy Consumption for 2018 Project

Energy Source	Count	Consumption Rate (approx.)	Consumption (approx.)
Residential Electricity	356 dwelling units	7,863 kWh/dwelling unit	2.8 million kWh
Residential Natural Gas		71.8 kBtu/dwelling unit	237,000 kBtu
Non-Residential Electricity	140,000 square feet	19.4 kWh/square foot	2.8 million kWh ²
Non-Residential Natural Gas		665.7 kBtu/square foot	10.1 million kBtu
Total Electricity	—	—	5.6 million kWh
Total Natural Gas	—	—	11.2 million kBtu

Table 6-2 (cont.): Estimated Annual Energy Consumption for 2018 Project

Energy Source	Count	Consumption Rate (approx.)	Consumption (approx.)
Notes: kWh = kilowatt hours kBTU = kilo-British thermal unit ¹ The total non-residential electricity consumptions includes additional energy use associated with the proposed parking lot, which is not accounted for in the building consumption rate of 19.4 kWh/square foot. Source: FCS, 2018 (see Appendix C for the modeling output files used to estimate GHG emissions associated with the proposed project; the estimates presented in this table provide the unmitigated project buildout scenario).			

As shown in the table, the 2018 Project is estimated to demand a total of approximately 5.6 million kilowatt hours (kWh) of electricity and 11.2 million kilo-British thermal units (kBTU) of natural gas at buildout on an annual basis. The residential and non-residential components would be subject to the latest adopted edition of the Title 24 energy efficiency standards, which are among the most stringent in the United States. As such, the 2018 Project would not result in the unnecessary, wasteful, or inefficient use of energy. Furthermore, implementation of Mitigation Measure GHG-1 described in Section 3.3 would further reduce energy consumption from the project through the inclusion of measures to require solar photovoltaic panels or 100 percent renewable energy.

6.3.3 - Vehicle Miles Traveled

In response to Senate Bill 743 (SB 743), the Office of Planning and Research (OPR) has updated CEQA Guidelines to include new transportation-related evaluation metrics. Draft guidelines were developed in August 2014, with updated draft guidelines prepared January 2016, which incorporated public comments from the August 2014 guidelines. OPR released final proposed Guidelines on November 27, 2017, with an associated Technical Advisory Document on Evaluating Transportation Impacts in CEQA dated April 13, 2018; ultimately, the Natural Resources Agency finalized updates to the CEQA Guidelines on December 28, 2018. The final adopted Guidelines include a new Section 15064.3 on vehicle miles traveled (VMT) analysis and thresholds for land use developments. New Guidelines Section 15064.3 states that they do not take effect until July 1, 2020, unless the lead agency adopts them earlier. Neither the City of Pittsburg nor the Contra Costa Transportation Authority (CCTA) has established any standards or thresholds on VMT. Therefore, the new guidelines relating to VMT are not yet applicable to the analysis in this Draft SEIR.

As noted above, there are no mandatory standards in effect on VMT analysis as of this writing and the City is not required to include a VMT analysis for purposes of CEQA compliance until July 1, 2020 (unless the City elects to implement sooner, which has not yet occurred). Nevertheless, a preliminary assessment of the VMT generated by the 2018 Project was prepared for informational and disclosure purposes only. No determination on the significance of VMT impacts is made in this document since none is legally required.

To conduct the VMT assessment, Fehr & Peers used the CCTA travel demand model to estimate the VMT generated by the 2018 Project uses, as presented in Table 6-3. In total, the 2018 Project is expected to generate approximately 49,075 vehicle miles of travel per day. For the residential

portion of the 2018 Project, the level of vehicle travel was normalized by the expected number of residents to estimate a VMT per capita, which was then compared to the VMT per capita for the City of Pittsburg, as well as the Countywide and Bay Area wide average, as presented in Table 6-4. Home based trips per capita in Pittsburg are slightly lower than the Bay Area average and about 17 percent lower than the Contra Costa County average. The residential portion of the 2018 Project could slightly increase VMT per capita in the City of Pittsburg, although it would be less than the Bay Area or County-wide average.

Table 6-3: 2018 Project Generated VMT Summary

Land Use	Daily VMT (approx.)
Residential	14,812
Retail	34,263
Total	49,075
Source: Fehr & Peers 2018.	

Table 6-4: Average VMT Per Capita Existing Conditions (Residential Uses)

Land Use Type	Project	Pittsburg	Contra Costa County	Bay Area
Home Based VMT	15.2	14.9	18.0	15.3
Source: Fehr & Peers 2018.				

The retail portion of the 2018 Project has the potential to generate approximately 34,263 vehicle miles of travel on an average daily basis, and accounting for patrons, employees and deliveries. However, as noted in the Technical Advisory, “lead agencies should analyze the effects of a retail project by assessing the change in total VMT because retail projects typically re-route travel from other retail destinations. A retail project might lead to increases or decreases in VMT, depending on previously existing retail travel patterns.”

To assess the retail portion of the 2018 Project’s effect on vehicle miles of travel, the VMT was evaluated for the “without retail” and “with retail” conditions for the cumulative scenario, with the results presented in Table 6-5. The analysis results indicate that the retail portion of the 2018 Project could increase overall vehicle miles of travel, although the net change in VMT at the City-wide level is less than the total VMT generated by the proposed retail uses.

Table 6-5: Citywide VMT—Cumulative Condition (With/Without Retail)

Scenario	Daily VMT (approx.)
Year 2040 without Retail	2,715,787
Year 2040 with Retail	2,739,759
Net Change	23,972
Source: Fehr & Peers 2018.	

Results of the VMT analysis indicate that the 2018 Project would contribute to an increase in vehicle miles of travel on a per-capita basis. The planned provision of a grocery use at the project site would reduce VMT, as residents would not need to travel as far to purchase groceries. Therefore, although the proposed commercial uses could result in a slight increase in overall VMT, the net-change is less than the overall total generated by the commercial portion of the 2018 Project, as a result of the beneficial effect provided by the grocery/retail use.

As there are no thresholds of significance being applied here for the reasons set forth above, this analysis is being prepared for informational purposes only.

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